nectec

nectec.com

Surface Mounting Device

SHARE THE VALUE

TRANSFER THE BENEFIT

COMPANY PROFILE

Nectec has been devoted to providing all-in-one SMT solutions for years. We integrated the most valuable suppliers globally to help you solve any issues in the PCB assembly line.

All the options we can offer include PCB handling, placing, soldering, printing, inspection, conformal coating, and peripheral consumable series, etc. You can find out your favorite equipment along with complete purchase information quickly here.

The one-stop service that we have been focusing on contains strict quality control, offering attentive pre-sales service in real-time at 24/7 to remove any purchasing barriers and post-sales service to keep improving the customer satisfaction. Fast and efficient customer service support will begin when we received your first inquiry

ADVANTAGES

Product R&D

With our strong and talented R&D teams,we can let the best technology satisfy your needs in the most valuable prices.

Demo centers

We have set up demo centers separately in each different markets in theworld,which can enable our suppliers to demonstrate their productsolutions or technologies easily and effectively to our customers.

After-service support

We hired the service engineers globally who can help our customers to fixany technical problems through their rich experience and precise spokenEnglish.

Free on-site training

We offer on-site training for each customer for free by sending engineersto any customer locations.

Vast information sharing

Relying on this platform,any visitors who are in different roles in the supplychain can share their opinions and ideas on the particular dimensions.

NT-P5

High-precision Modular Placement Machine

Advantage

- Efficient Integrated Placement Head Configuration (Convenient and Fast)
- Optimal Productivity: 42,000 CPH (Under Optimal Conditions of the Company)
- Capable of Mounting Components Ranging from 0201
- Microchips to 40mm*40mm Large Components!
- **Flexible Placement Head Configuration :** Configured with High-speed and Multifunctional Placement ,Heads Based on Product Characteristics.
- **Uses Magnetic Levitation Motion Module :** to Ensure High-speed and Stable Placement Capability, Achieving High-speed and High-precision Placement Results.
- **Pioneers the Use of Industrial :** Linear Camera Scanning and Recognition Systems.
- **Automatic Correction System :** with Thermal Compensation Correction Device.
  Automatic Tape Cutting and Collection : Device Makes Production More Efficient and Convenient.
- **Supports MES System for Quality and Efficiency :** Enabling Intelligent Management and Improving Enterprise Manufacturing Execution Capability Through MES System for Equipment Production.

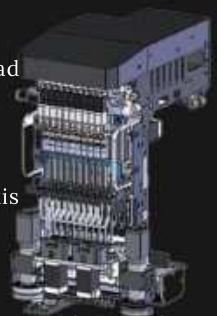
Feature

● Multiple High-end Configurations Ensure High-precision,High-efficiency, and Stable Production

① XY Axis Configured with Linear Motors

The XY Axis Adopts Advanced Dual Linear Motor Configuration in the Industry, Which Features Less Wear, Higher Precision, and Longer Service Life. The Dual Linear Motor Configuration Enables **Higher Production Efficiency While Ensuring Equipment Stability.**

② High-speed Placement Head

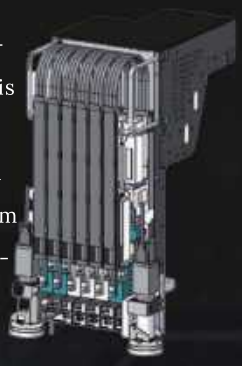


Equipped with a New Lightweight 10-head High□speed Placement Head with Flying Cameras, It Can Handle 0201 Microchips to L12*W12*H6.5 MM Regular Components. The Z-axis of the Placement Head Uses High-**precision Linear Motors to Ensure** Component Placement Accuracy of ±0.035mm, Achieving High□efficiency Placement.

③ Linear Scanning Camera

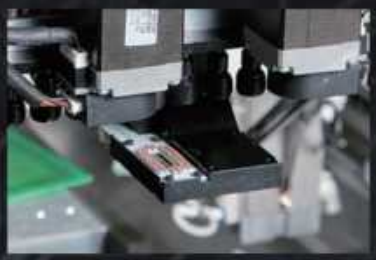
A Newly Designed Light Source Controller, Combined with Imported High-resolution Industrial Cameras, Achieves Higher Precision and Faster Response for High-precision Placement of Various **Chips and Irregular Components.**

④ High-precision Multifunctional Head



Equipped with the New 0624R High-precision Placement Head, the R-axis is Controlled by a High-precision Servo Motor. It Can Handle Imperial 0201 Microchips to L40*W40*H25mm Large/Irregular Components, Achi**eving High-precision and Fast** Placement.

⑤ Flying Camera



The New Flying Camera Can Identify and Correct All CHP Components During High-speed Placement. Component Size Recognition Range is Within 12*12mm. It Can Also Recognize Certain Chip Components, Spherical Components, etc., to Achieve More Efficient Production.

● Feeding Devices and Corresponding Components: Supports Production with Multiple Material Packaging Feeders

① Tray Feeding System (Optional)

Newly Upgraded IC Tray with Servo High-precision Rail-based Tray Feeding Capability, Supporting Up to 20 Tray Slots and On□line Tray Change Without Stopping the Machine.

② Lightweight Electric Feeder

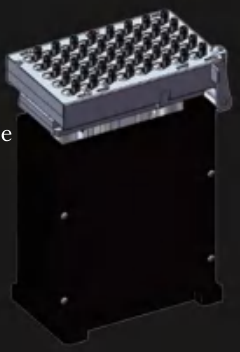
Independently Developed New High□precision Feeder Ensures High□precision Feeding of 0201 Microchips and Supports Components of 8/12/16/24/32/44/56/72/88mm Specifications.

③ Tubular Feeding Feeder

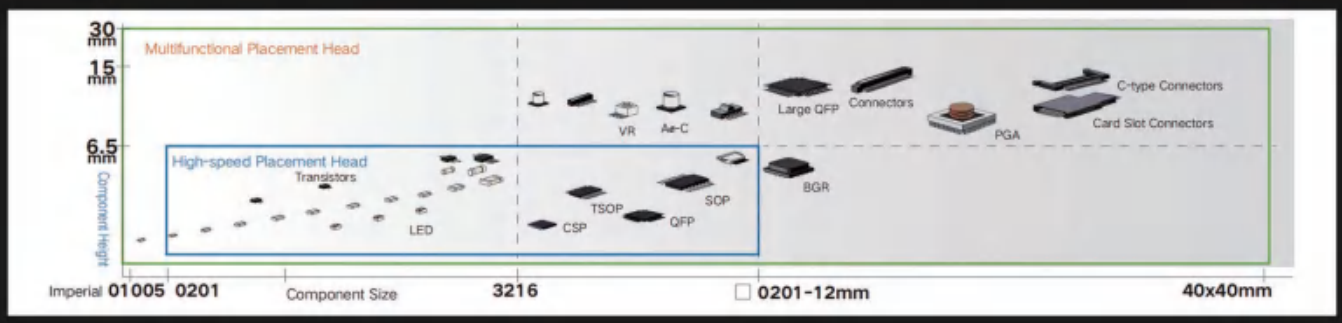
Newly Upgraded Vibration Feeder with More Stable Vibration Frequency to Flexibly Meet Various Tubular Material Feeding Needs.

④ ATC Nozzle Automatic Exchange (Optional)

The newly designed ATC automatic nozzle exchange device can accommodate 40pcs of various nozzle models and automatically switch between nozzle models according to production needs.



⑤ Supported Components



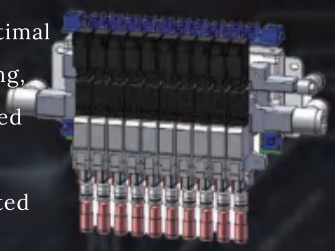
● Intelligent Functional Configurations: Making Equipment Operation More Convenient, Smarter, and More Flexible

① Quick Model Switching (Optional)

Reads QR codes to send data, allowing downstream equipment to execute program downloads and automatically adjust track width.

② Real-time Vacuum Monitoring

Performs self-check of vacuum before picking to confirm the optimal vacuum value. After picking, the vacuum level is checked to ensure proper material pickup, avoiding unexpected losses during transport.



③ Correcting the Pickup Center Position

Through Faroad's placement machine programming software, the pickup center of taped materials can be automatically identified and corrected.

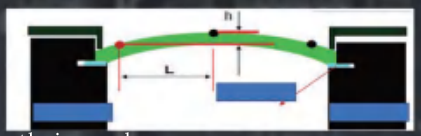
*Automatically Identify and Correct the Pickup Center of Taped Materials

④ Force Control Management (Optional)

Can control placement pressure and pressing time according to the characteristics of product components and related process requirements.

⑤ Quick Model Switching (Optional)

Faroad's substrate warping detection function uses lasers to detect substrate warping, automatically calculates the surface curve, and adapts the placement height compensation. Users can freely set measurement positions accor-ding to their needs.

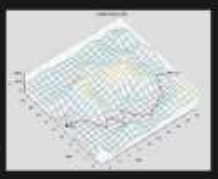


⑥ Non-standard Component Free Editing

Newly developed intelligent digital centering algorithm enables one-click free editing of non-standard/irregular components.

⑦ Path Optimization

Introduces intelligent algorithms such as Ant Colony Algorithm, Cluster Analysis, and AI Deep Learning to automatically optimize the best paths for pickup and placement, achieving optimal equipment utilization.



⑧ Coordinate Import

Supports one-click coordinate import: Placement coordinates can be imported with one click via text formats, EXCEL files, or other text files.

⑨ Local Area Network (LAN) Management

LAN management allows component database and online machine database to sync updates. Enables LAN transmission to prevent USB drive virus transfer.

Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

Model Name	Category	NT-P5	
Specifications	Placement Head Module	Single Arm	
	Track Module	Single Track	
	Number of Nozzles	High-speed Placement Head (10 Heads)	Multifunctional Placement Head (6 Heads)
Dimensions	L×W×H	1380*1880*1550mm	
Weight	Weight	Approx. 1850KG	
Specifications	Air Source	0.5MPa，200L/min	
	Power Supply/ Power Consumption	AC380/420/480V, 5KW	
Target Substrate	PCB Size	Single Track:Minimum 50*50mm，Maximum 510*410mm	
	PCB Thickness	0.5-9.0mm	
	PCB Fixing Method	Pneumatic Lifting Platform, Upper and Lower Clamps	
Placement Function	Optimal Placement Speed	42000CPH	18000CPH
	Placement Accuracy (CPK)	± 0,035mm(XYZ),CPK ≥ 1.0	± 0,03mm(XYZ), CPK ≥ 1.0
	Supported Component Range	Flying Camera: Minimum Imperial 0201, Maximum L12*W12*H6.5mm	——
		Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H13mm	Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H25mm
Vision System	MARK Camera Field of View	L20mm*w20mm	
	MARK Camera Type	Area Array 500W	
	Component Camera Type	Flying Camera	——
		Fixed Camera	
Feeding System	Feeders	Electric Feeder	
	Number of Feeders	Single Side: 50 Slots (8mm); Double Side: 100 Slots (8mm, Optional)	
	Tape Feeders	Tape:8/12/16/24/32/44/56mm	Tape:8/12/16/24/32/44/56/72/88mm
	Tube Feeders	Number of Slots for a Single Vibration Feeder:	
		4-20mm x 3 Tubes, 30-40mm x 2 Tubes, 40-50mm x 1 Tube	
	TRAY（Optional）	——	TRAY Cabinet Capacity: L323*W136* H7.5mm, 20 Trays
Control Sectio	X axis	High-precision Linear Motor + Encoder	
	Y axis	Dual-drive Linear Motor + Encoder, Full Closed-loop Control	
	Z axis	High-precision Linear Motor	
	R axis	High-precision Servo Motor	
MES System Integration	MES Data Collection	Supports TCP/IP Communication Protocol	
	MES Upload	Supports QR Code/Barcode Recognition and Binding for MES Upload	

NT-P3

Multi-function Pick And Place Machine

Advantage

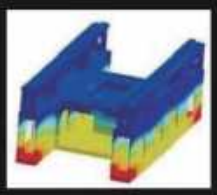
- Up to 42000CPH
- Flexible Configuration Of Placement Head : Configure high-speed and multi-function placement heads according to product
- Magnetic Levitation Motion Module : Industrial Linear CamerasScanning Identification System
- Automatic Calibration System : Thermal compensation correction device
- Automatic Cut&Collect ConfigurationFor Belt
- Support Mes System : MES system can realize intelligent management of equipment production,quality,efficiency,etc.Improvemanufacturing execution capabilities.

Feature

● Head Configuration Makes The Equipment More High-speed And Practical

① One-piece Cast Frame

A cast one-piece frame undergoes for365 days of natural aging to relievestress,and adopts a high-temperature annealing process to prevent thermal deformity and thermal deformation ofhigh-speed movement.



② High-speed Response And High-Precision Full-closed Loop Control

Y-axis adopts dual linear motor drive toachieve high-speed response,high-precision full closed-loop management.

③ Dual Gantry Configuration

Single-track and double-track operations are flexibly used through the dual-gantry configuration,and the twosets of placement heads are independently controlled to minimize the interference.

④ IMagnetic Levitation Linear Motor AndGrating Ruler

Using the advanced linear motor configuration inthe industry,the linear motor has longer life span-and fully guarantees the stability of the equip-ment.

⑤ Automatic Ic Tray (Optional)

Supports up to 20 trays inline with non-stop changing.

⑥ Electric Feeder

Support 8/12/16/24/32/44/56/72/88mm feeders.

⑦ Tube Feeder

Tube feeder has a more stable vibration frequency and canflexibly respond to the feeding needs.

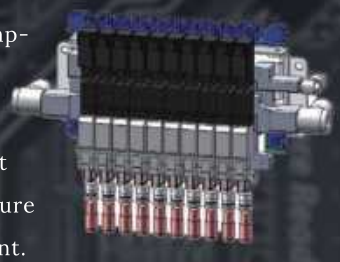
● A Variety Of High-end Configurations

① Automatic Nozzle Change (Optional)

Standard 10 heads can mount 0201 to 12*12mm components.Optional 4 headscan mount 01005 to60*40 mm components.

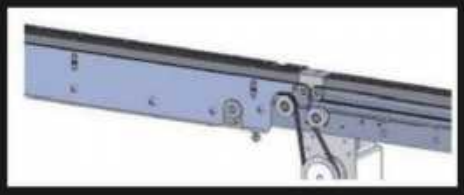
② Thermal CompensationCalibration Device

High-precision thermal compensation correction device can monitor and automatically correct the place-ment accuracy in real time to ensure the stability of the equipment.



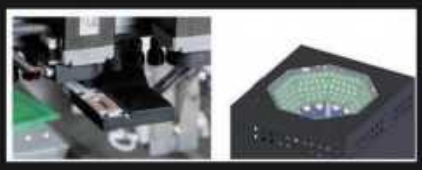
③ Pcb Support Plate

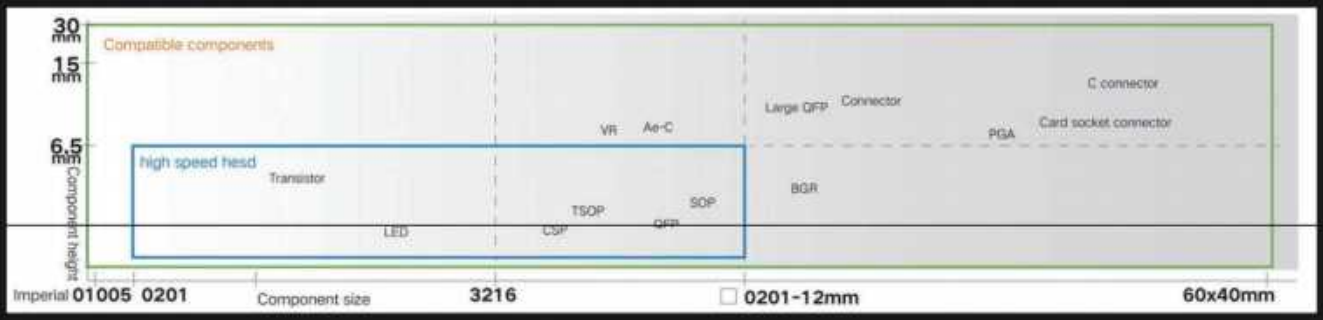
Flectric support Plate adjusts PCBfor the upper and lower directionunder the controllable pressure.



④ Light Source Controller

Linear scanning camera:high-resolution industrial cameras to achievehigher precision placement.Flying camera:It can identify and correctall CHIP components during the placement process,and the size ofthe components can be identified within 12*12mm.





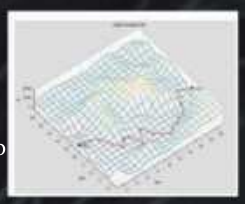
● Intelligent software system

① Non-standard Components Can Be Edited.

Newly developed intelligent digital alignment algorithm used to realize non-standard components/odd-shaped irregular components by thefunction of one-click editing.

② ICoordinate Import

To achieve the best equip-ment utilization rate,the Intelligent algorithms such asant colony a lgorithm/clusteranalysis/Al deep learning arenewly added.



③ Support Mes SystemCollection

MES system can realizeintelligent management of equipment production,quality,efficiency,etc. Improvemanufacturing efficiency.

④ Coordinate Import

One-click import of coordinates data through text files such as text format,EXCEL files,etc.,

⑤ Lan Management

Local network,software database and online machine database inter-communication update,realizing local area network transmission to prevent virus transmission.

⑥ Support Mes Upload

Automatic identification of QR code or bar-code after placement done,then uploads the data to MES server to achieve traceability.

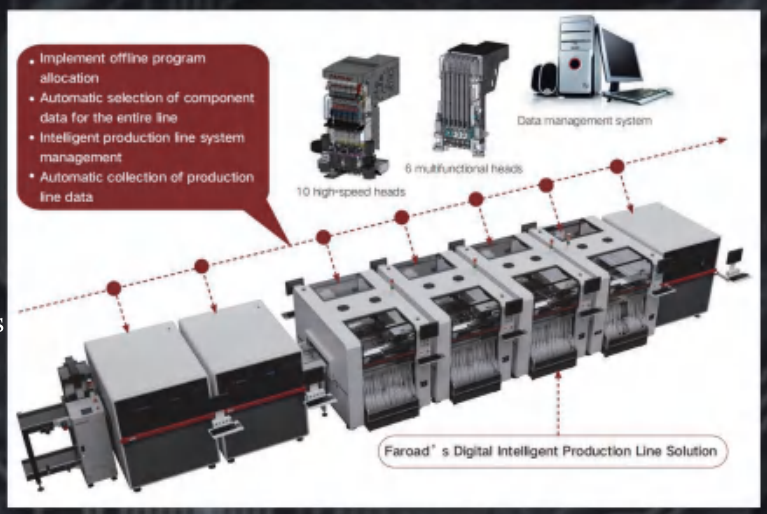
※ Due to improvement requirements, specifications and appearance may change without prior notice

Model Name	Category	NT-P3	
Specification	Number of nozzles	10	4
Size	L×W×H	1380*1880*1550mm	
Weight	weight	About 1850KG	
PCB Board	PCB size	Single track minimum 50*50mm maximum510*410mm	
	PCB thickness	0.5-5mm	
	PCB fixing method	Upper and lower splint	
Electrical	Gas source	0.5MPa,150L/min	
	Power	AC380/420/480,3.5KVA	
Placement Capability	Optimal Speed	42000CPH	18000CPH
	Placement Head	High-speed placement head (10 heads)	Multi-function placement head (4 heads)
	Accuracy (CPK)	±0.035mm(XYZ) ±0.035℃(R) CPK≥1.0	±0.03mm(XYZ) ±0.03℃(R) CPK≥1.0
	pressure	Min 0.5N Max 40N	Min 0.5N Max 60N
	component range	Flying Camera:Imperial 0201-L12×W12XH6.5mm Fixed camera:Imperial 0201chip-L60*W40*H15mm	Fixed camera:Imperial 01005-L60*W40*H30mm
Vision System	MARK camera range	L16mm*W16mm	
	MARK Camera Type	Area Array 500W	
	Component Camera Type	Flying camera(optional fixed camera)	Optional fixed camera
Feeding System	Slot Feeder	Tape:8/12/16/24/32/44/56mm	Tape:8/12/16/24/32/44/56/72/88mm
	Tube feeder	The number of single vibrating feeders installed;4-20mmx3;30-40mmx2;40-50mmx1	
	Tray	TARY cabinet equipped:L323mmxW136mmXH7.5mm×20 tray	
	Feeder Station	60 stations on one side (116 stations on both sides)is calculated as 8mm	
	feeder type	Electric feeder	
Control Sectio	X axis	High precision servo motor	
	Y axis	Double linear motor+grating ruler,fully closed loop control	
	Z axis	High precision motor	
	R axis	High precision motor	
MES System Integration	MES acquisition	Support TCP/IP communication protocol	
	MES Upload	Support QR code/barcode recognition/binding upload MES	

NT-B5

High Speed Pick and Place Machine

Advantage


• Implement offline program allocation
• Automatic selection of component data for the entire line
• Intelligent production line system management
• Automatic collection of production line data
10 high-speed heads
6 multifunctional heads
Data management system
Faroad's Digital Intelligent Production Line Solution

- Dual-arm combined mounting system can achieve a maximum mounting speed of 82,000 CPH (under optimal conditions in our company).
- Dual-arm, dual-drive method effectively ensures the accuracy and consistency of the equipent's high-speed operation.
- Optimized balanced production line achieves high efficiency and high-quality production.
- The entire production line equipment can be intelligently managed through the MES system.
- Offline programming software VConnector: By using offline programming software to intelligently optimize the optimal placement time, the efficiency of the entire production line can be improved.
- Customers can flexibly choose the configuration scheme of the mounting production line;

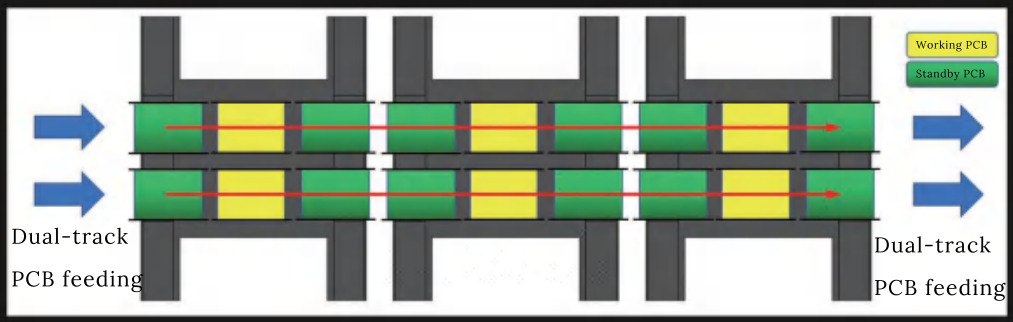
Feature

● Dual-track configuration for high production efficiency

Adopting a dual-track conveyor configuration allows the production line to achieve independent mounting and alternating mounting

Independent mounting: Two tracks allow different substrates to be produced independently without interference, achieving higher efficiency mounting.

Alternating mounting: The front and rear mounting heads can simultaneously mount on one substrate without interfering with each other's travel.



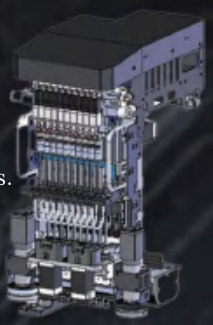
● Multiple High-end Configurations Ensure High-precision, High-efficiency, and Stable Production

① XY Axis Configured with Linear Motors

The XY Axis Adopts Advanced Dual Linear Motor Configuration in the Industry, Which Features Less Wear, Higher Precision, and Longer Service Life. The Dual Linear Motor Configuration Enables **Higher Production Efficiency** While Ensuring Equipment Stability.

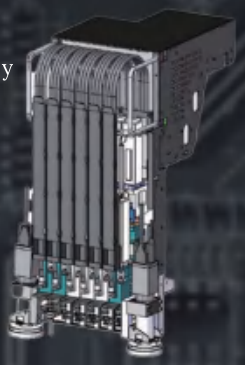
② High-speed Placement Head

Equipped with a New Lightweight 10-head Highuspeed Placement Head with Flying Cameras, It Can Handle 0201 Microchips to L12*W12*H6.5MM Regular Components. The Z-axis of the Placement Head **Uses High-precision Linear** Motors to Ensure Component Placement Accuracy of ±0.035mm, Achieving High-efficiency Placement.



③ High-precision Multifunctional Head

Equipped with the New 0624R High-precision Placement Head, the R-axis is Controlled by a High-precision Servo Motor. It Can Handle Imperial 0201 Microchips to L40*W40*H25 mm Large/Irregular Components, Achieving High-precision and Fast Placement.



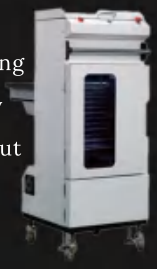
● Feeding Devices and Corresponding Components: Supports Production with Multiple Material Packaging Feeders

① One click Dock cart (optional)

Newly designed fast moving platform, Dock cart can be prepared in advance. One click fast andquick line changing. Single cart 50 Feeder slots (8mm)

② Tray Feeding System (Optional)

Newly Upgraded IC Tray with Servo High-precision Rail-based Tray Feeding Capability, Suppor-ting Up to 20 Tray Slots and Onnline Tray Change Without Stopping the Machine.



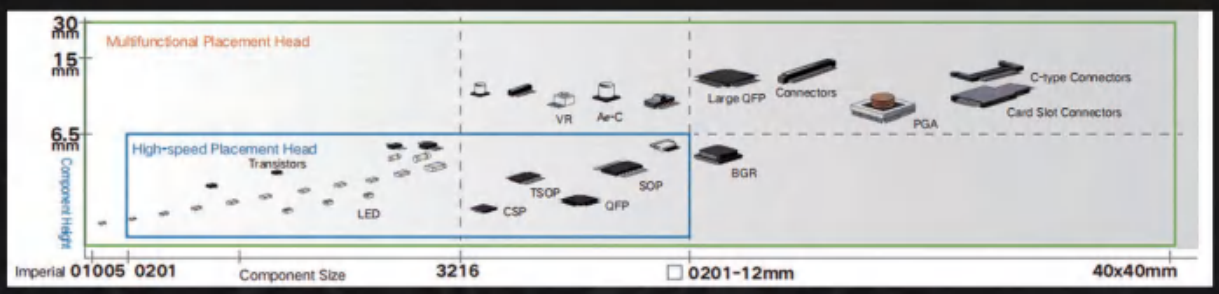
③ Lightweight Electric Feeder

Independently Developed New Highnprecision Feeder Ensures Highnprecision Feeding of 0201 Microchips and Supports Components of 8/12/16/24/32/44/56/72/88mm Specifications.

④ Tubular Feeding Feeder

Newly Upgraded Vibration Feeder with More Stable Vibration Frequency to Flexibly Meet Various Tubular Material Feeding Needs.

⑤ Supported Components



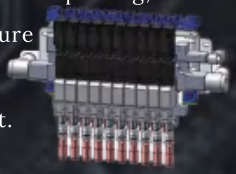
● Intelligent Functional Configurations: Making Equipment Operation More Convenient, Smarter, and More Flexible

① ATC Nozzle Automatic Exchange (Optional)

The newly designed ATC automatic nozzle exchange device can accommodate 40pcs of various nozzle models and automatically switch between nozzle models according to production needs.

② Real-time Vacuum Monitoring

Performs self-check of vacuum before picking to confirm the optimal vacuum value. After picking, the vacuum level is checked to ensure proper material pickup, avoiding unexpected losses during transport.



③ Calibration of the material pickup center position

The programming software for the Faroad SMT machine can automatically identify and calibrate the strip material retrieval center.

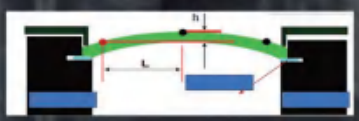
*Automatically identify and calibrate the strip material retrieval center

④ Quick Model Switching (Optional)

Reads QR codes to send data, allowing downstream equipment to execute pr-ogram downloads and automatically adjust track width.

⑤ Supported Components

Faroad's substrate warping detection function uses lasers to detect substrate warping, automatically calculates the surface curve, and adapts the placement height compens-ation.Users can freely set measurement positions according to their needs.



Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

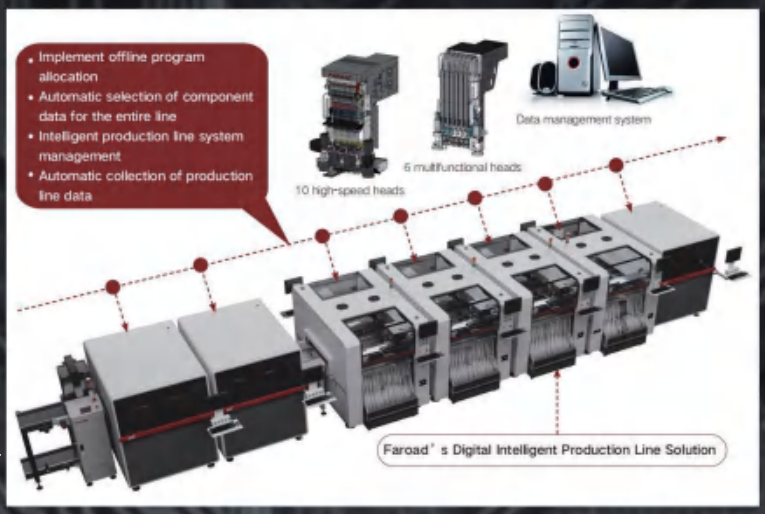
Model Name	Category	NT-B5	
Specifications	Placement Head Module	Dual arms	
	Track Module	Single/double track	
	Number of Nozzles	High-speed Placement Head (10+10Heads)	Multifunctional Placement Head (6+6Heads)
Dimensions	L×W×H	1380*2326*1550mm	
Weight	Weight	Approx 2836KG（including trolley）	
Specifications	Air Source	0.5MPa，300L/min	
	Power Supply/Power Consumption	AC380/420/480V,5KW	
Target Substrate	PCB Size	Single Track:： Minimum 50*50mm，Maximum 510*550mm Dual track: Minimum 50*50mm，Maximum 51*300mm （Can be modified to mount 1200mm）	
	PCB Thickness	0.5-9.0mm	
	PCB Fixing Method	Pneumatic Lifting Platform, Upper and Lower Clamps	
Placement Function	Optimal Placement Speed	82000CPH	36000CPH
	Placement Accuracy (CPK)	± 0,035mm(XYZ),CPK ≥ 1.0	± 0,03mm(XYZ), CPK ≥ 1.0
	Supported Component Range	Flying Camera: Minimum Imperial 0201, Maximum L12*W12*H6.5mm	—
		Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H13mm	Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H25mm
Vision System	MARK Camera Field of View	L20mm*w20mm	
	MARK Camera Type	Area Array 500W	
	Component Camera Type	Flying Camera	—
		Fixed Camera	
Feeding System	Trolley	Support	
	Feeders	Electric Feeder	
	Number of Feeders	100 Slots（8mm ）	
	Tape Feeders	Tape:8/12/16/24/32/44/56mm	Tape:8/12/16/24/32/44/56/72/88mm
	Tube Feeders	Number of Slots for a Single Vibration Feeder:	
		4-20mmx3 Tubes,，30-40mmx2 Tubes，40-50mmX1 Tubes	
	TRAY（Optional）	—	TRAY Cabinet Capacity: L323*W136*H7.5mm, 20 Trays
Control Sectio	X axis	High-precision Linear Motor + Encoder	
	Y axis	Dual-drive Linear Motor + Encoder, Full Closed-loop Control	
	Z axis	High-precision Linear Motor	
	R axis	High-precision Servo Motor	
MES System Integration	MES acquisition	Supports TCP/IP Communication Protocol	
	MES Upload	Supports QR Code/Barcode Recognition and Binding for MES Upload	

NT-B6

Multi-function Pick And Place Machine

Advantage

- Utilizes a dual-arm modular placement design to achieve a maximum placement speed of 90,000 CPH (under optimal conditions by our company).
- The dual-arm dual-drive method ensures high-speed operational accuracy and consistency of the equipment.
- .Optimal balanced line design ensures high-efficiency and high-quality production.


• Implement offline program allocation
• Automatic selection of component data for the entire line
• Intelligent production line system management
• Automatic collection of production line data
10 high-speed heads
6 multifunctional heads
Data management system
Faroad's Digital Intelligent Production Line Solution

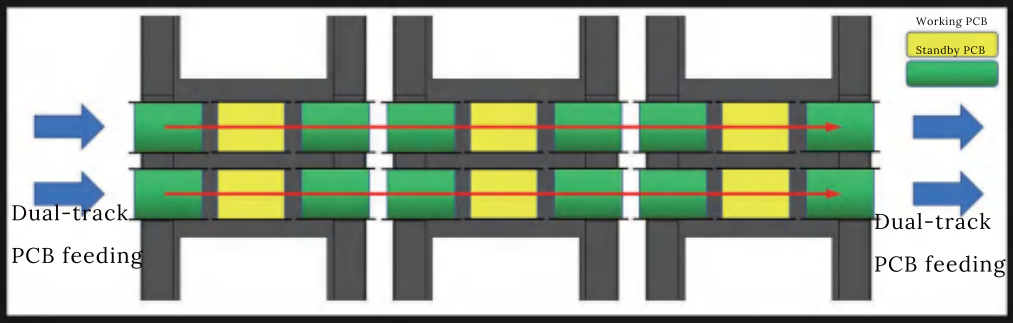
- The entire line equipment can integrate with MES systems for smart factory management.
- Offline programming software VConnector: Optimizes placement times intelligently through offline programming, enhancing the efficiency of the entire line.
- Customers can flexibly choose placement production line configurations.

Feature

● Dual-track configuration for high production efficiency

The dual-track conveyor system allows for independent and alternate placement processes.

Independent placement: Two tracks can independently produce different substrates without interference, achieving higher efficiency.Alternate placement: The front and rear placement heads can simultaneously operate on a single substrate without interfering with each other.



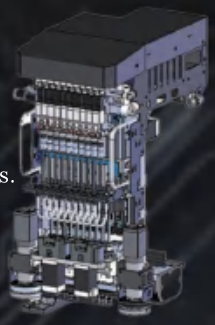
● Multiple High-end Configurations Ensure High-precision,High-efficiency, and Stable Production

① XY Axis Configured with Linear Motors

The XY Axis Adopts Advanced Dual Linear Motor Configuration in the Industry, Which Features Less Wear, Higher Precision, and Longer Service Life. The Dual Linear Motor Configuration Enables Higher Production Efficiency While Ensuring Equipment Stability.

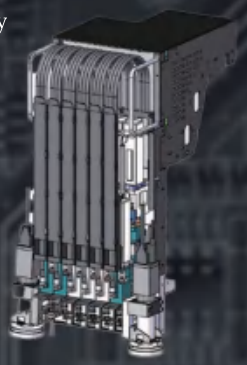
② High-speed Placement Head

Equipped with a New Lightweight 10-head High□speed Placement Head with Flying Cameras, It Can Handle 0201 Microchips to L12* W12*H6.5MM Regular Components. The Z-axis of the Placement Head Uses High-precision Linear Motors to Ensure Component Placement Accuracy of ±0.035mm, Achieving High-efficiency Placement.



③ High-precision Multifunctional Head

Equipped with the New 0624R High-precision Placement Head, the R-axis is Controlled by a High-precision Servo Motor. It Can Handle Imperial 0201 Microchips to L40*W40*H25 mm Large/Irregular Components, Achieving High-precision and Fast Placement.



● Feeding Devices and Corresponding Components: Supports Production with Multiple Material Packaging Feeders

① One click Dock cart (optional)

Newly designed fast moving platform, Dock cart can be prepared in advance. One click fast andquick line changing. Single cart 50 Feeder slots (8mm)

② Tray Feeding System (Optional)

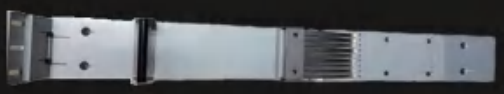
Newly Upgraded IC Tray with Servo High-precision Rail-based Tray Feeding Capability, Suppor-ting Up to 20 Tray Slots and Onnline Tray Change Without Stopping the Machine.

③ Lightweight Electric Feeder

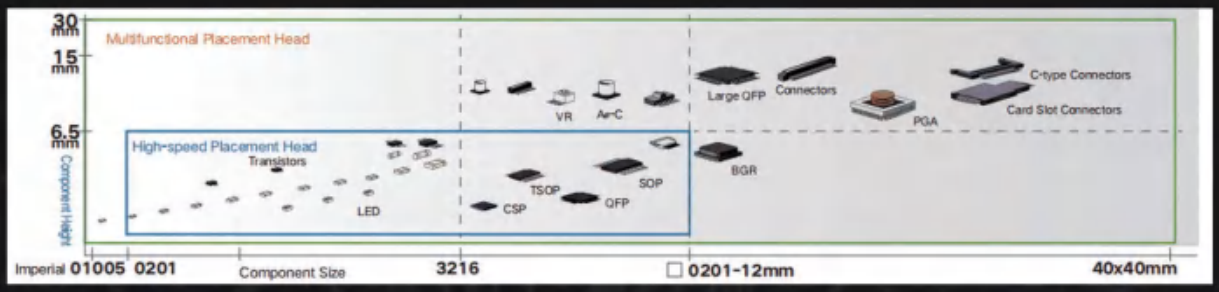
Independently Developed New Highnprecision Feeder Ensures Highnprecision Feeding of 0201 Microchips and Supports Components of 8/12/16/24/32/44/56/72/88mm Specifications.

④ Tubular Feeding Feeder

Newly Upgraded Vibration Feeder with More Stable Vibration Frequency to Flexibly Meet Various Tubular Material Feeding Needs.



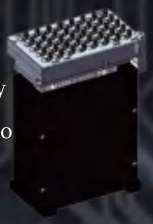
⑤ Supported Components



● Intelligent Functional Configurations: Making Equipment Operation More Convenient, Smarter, and More Flexible

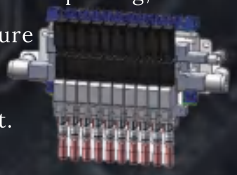
① ATC Nozzle Automatic Exchange (Optional)

The newly designed ATC automatic nozzle exchange device can accommodate 40pcs of various nozzle models and automatically switch between nozzle models according to production needs.



② Real-time Vacuum Monitoring

Performs self-check of vacuum before picking to confirm the optimal vacuum value. After picking, the vacuum level is checked to ensure proper material pickup, avoiding unexpected losses during transport.



③ Calibration of the material pickup center position

The programming software for the Faroad SMT machine can automatically identify and calibrate the strip material retrieval center.

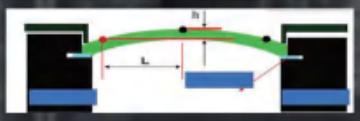
*Automatically identify and calibrate the strip material retrieval center

④ Quick Model Switching (Optional)

Reads QR codes to send data, allowing downstream equipment to execute pr-ogram downloads and automatically adjust track width.

⑤ Supported Components

Faroad's substrate warping detection function uses lasers to detect substrate warping, automatically calculates the surface curve, and adapts the placement height compens-ation.Users can freely set measurement positions according to their needs.



Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

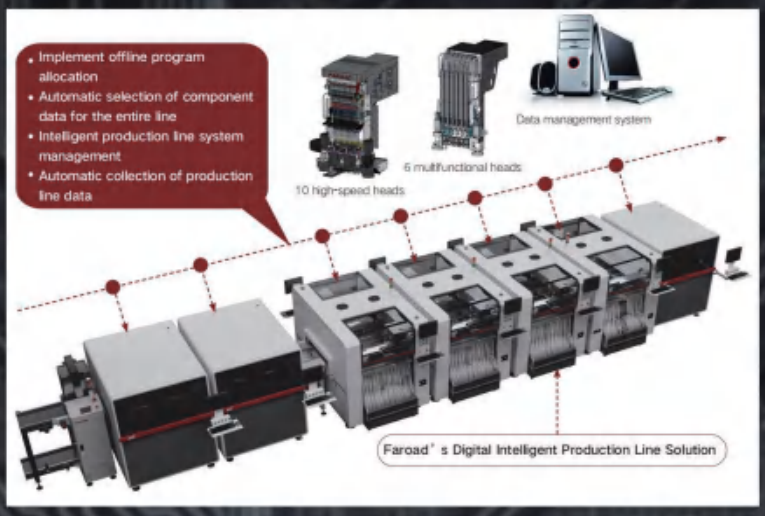
Model Name	Category	NT-B6	
Specifications	Placement Head Module	Dual arms	
	Track Module	Single/double track	
	Number of Nozzles	High-speed Placement Head (10+10Heads)	Multifunctional Placement Head (6+6Heads)
Dimensions	L×W×H	L1380 X W2060 X H1450mm L1380 X W2280 X H1450mm (Including Feeder cart)	
Weight	Weight	Approx 2760KG（including trolley）	
Specifications	Air Source	0.5MPa，300L/min	
	Power Supply/Power Consumption	AC380/420/480V,5KW	
Target Substrate	PCB Size	Single track：Min 50*50mm，Max 510*510mm Dual track： Min 50*50mm，Max 510*280mm (Can be modified and mounted 1200mm)	
	PCB Thickness	0.5-9.0mm	
	PCB Fixing Method	Electric lifting platform, upper and lower clamps	
Placement Function	Optimal Placement Speed	90000CPH	38000CPH
	Placement Accuracy (CPK)	± 0,035mm(XYZ),CPK ≥ 1.0	± 0,03mm(XYZ), CPK ≥ 1.0
	Supported Component Range	Flying Camera: Minimum Imperial 0201, Maximum L12*W12*H6.5mm	—
		Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H13mm	Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H25mm
Vision System	MARK Camera Field of View	L10mm*w10mm	
	MARK Camera Type	Area Array 500W	
	Component Camera Type	Flying Camera	—
		Fixed Camera	
Feeding System	Trolley	Support	
	Feeders	Electric Feeder	
	Number of Feeders	100 Slots（8mm）	
	Tape Feeders	Tape:8/12/16/24/32/44/56mm	Tape:8/12/16/24/32/44/56/72/88mm
	Tube Feeders	Number of Slots for a Single Vibration Feeder:	
		4-20mmx3 Tubes,, 30-40mmx2 Tubes，40-50mmX1 Tubes	
	TRAY（Optional）	—	TRAY Cabinet Capacity: L323*W136*H7.5mm, 20 Trays
Control Sectio	X axis	High-precision Linear Motor + Encoder	
	Y axis	Dual-drive Linear Motor + Encoder, Full Closed-loop Control	
	Z axis	High-precision Linear Motor	
	R axis	High-precision Servo Motor	
MES System Integration	MES acquisition	Supports TCP/IP Communication Protocol	
	MES Upload	Supports QR Code/Barcode Recognition and Binding for MES Upload	

NT-T5

High Speed Pick and Place Machine

Advantage

- Dual-arm combined mounting system can achieve a maximum mounting speed of 84,000 CPH (under optimal conditions in our company).
- Dual-arm, dual-drive method effectively ensures the accuracy and consistency of the equipment's high-speed operation.
- Optimized balanced production line achieves high efficiency and high-quality production.


• Implement offline program allocation
• Automatic selection of component data for the entire line
• Intelligent production line system management
• Automatic collection of production line data
Data management system
6 multifunctional heads
10 high-speed heads
Faroad's Digital Intelligent Production Line Solution

- The entire production line equipment can be intelligently managed through the MES system.
- Offline programming software VConnector: By using offline programming software to intelligently optimize the optimal placement time, the efficiency of the entire production line can be improved.
- Customers can flexibly choose the configuration scheme of the mounting production line;

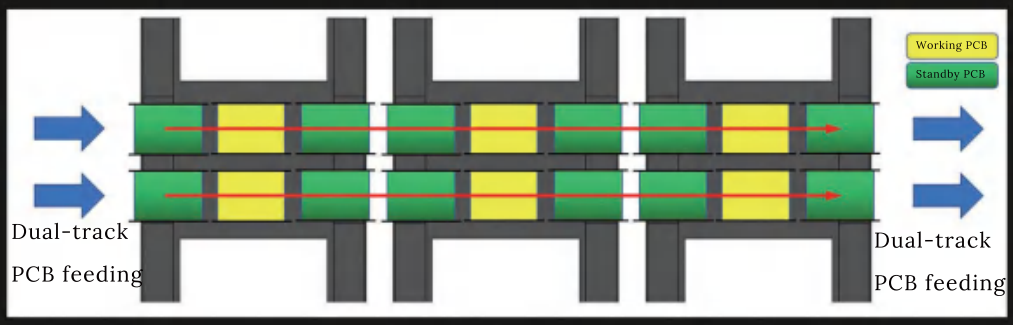
Feature

● Dual-track configuration for high production efficiency

Adopting a dual-track conveyor configuration allows the production line to achieve independent mounting and alternating mounting

Independent mounting: Two tracks allow different substrates to be produced independently without interference, achieving higher efficiency mounting.

Alternating mounting: The front and rear mounting heads can simultaneously mount on one substrate without interfering with each other's travel.



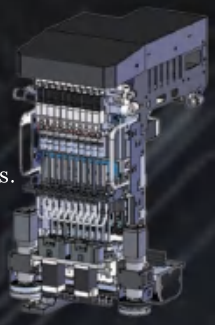
● Multiple High-end Configurations Ensure High-precision,High-efficiency, and Stable Production

① XY Axis Configured with Linear Motors

The XY Axis Adopts Advanced Dual Linear Motor Configuration in the Industry, Which Features Less Wear, Higher Precision, and Longer Service Life. The Dual Linear Motor Configuration Enables Higher Production Efficiency While Ensuring Equipment Stability.

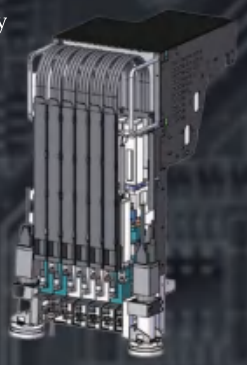
② High-speed Placement Head

Equipped with a New Lightweight 10-head High□speed Placement Head with Flying Cameras, It Can Handle 0201 Microchips to L12*W12*H6.5MM Regular Components. The Z-axis of the Placement Head Uses High-precision Linear Motors to Ensure Component Placement Accuracy of ±0.035mm, Achieving High-efficiency Placement.



③ High-precision Multifunctional Head

Equipped with the New 0624R High-precision Placement Head, the R-axis is Controlled by a High-precision Servo Motor. It Can Handle Imperial 0201 Microchips to L40*W40*H25 mm Large/Irregular Components, Achieving High-precision and Fast Placement.



● Feeding Devices and Corresponding Components: Supports Production with Multiple Material Packaging Feeders

① One click Dock cart (optional)

Newly designed fast moving platform, Dock cart can be prepared in advance. One click fast andquick line changing. Single cart 50 Feeder slots (8mm)

② Tray Feeding System (Optional)

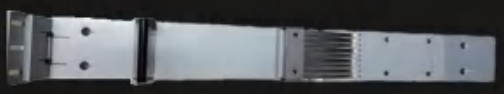
Newly Upgraded IC Tray with Servo High-precision Rail-based Tray Feeding Capability, Suppor-ting Up to 20 Tray Slots and Onnline Tray Change Without Stopping the Machine.

③ Lightweight Electric Feeder

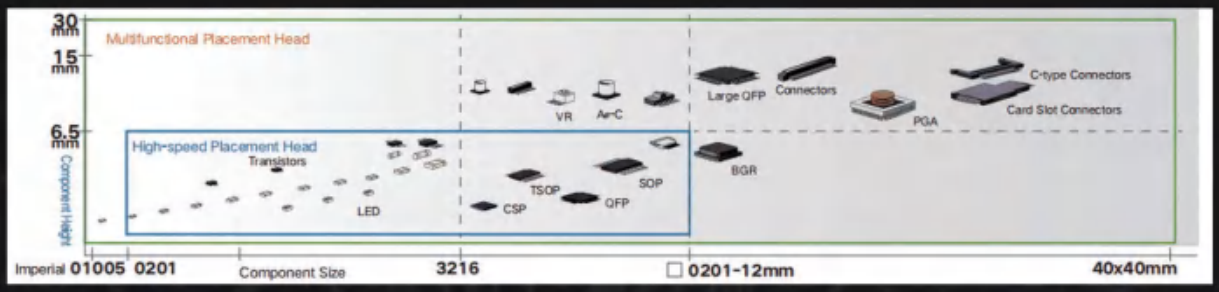
Independently Developed New Highnprecision Feeder Ensures Highnprecision Feeding of 0201 Microchips and Supports Components of 8/12/16/24/32/44/56/72/88mm Specifications.

④ Tubular Feeding Feeder

Newly Upgraded Vibration Feeder with More Stable Vibration Frequency to Flexibly Meet Various Tubular Material Feeding Needs.



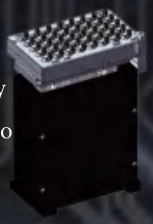
⑤ Supported Components



● Intelligent Functional Configurations: Making Equipment Operation More Convenient, Smarter, and More Flexible

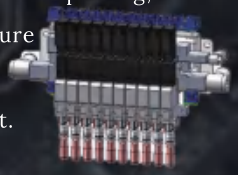
① ATC Nozzle Automatic Exchange (Optional)

The newly designed ATC automatic nozzle exchange device can accommodate 40pcs of various nozzle models and automatically switch between nozzle models according to production needs.



② Real-time Vacuum Monitoring

Performs self-check of vacuum before picking to confirm the optimal vacuum value. After picking, the vacuum level is checked to ensure proper material pickup, avoiding unexpected losses during transport.



③ Calibration of the material pickup center position

The programming software for the Faroad SMT machine can automatically identify and calibrate the strip material retrieval center.

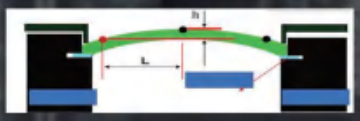
*Automatically identify and calibrate the strip material retrieval center

④ Quick Model Switching (Optional)

Reads QR codes to send data, allowing downstream equipment to execute pr-ogram downloads and automatically adjust track width.

⑤ Supported Components

Faroad's substrate warping detection function uses lasers to detect substrate warping, automatically calculates the surface curve, and adapts the placement height compens-ation.Users can freely set measurement positions according to their needs.



Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

Model Name	Category	NT-T5	
Specifications	Placement Head Module	Dual arms	
	Track Module	Single/double track	
	Number of Nozzles	High-speed Placement Head (10+10Heads)	Multifunctional Placement Head (6+6Heads)
Dimensions	L×W×H	1380*2326*1550mm	
Weight	Weight	Approx 2560KG（including trolley）	
Specifications	Air Source	0.5MPa，300L/min	
	Power Supply/Power Consumption	AC380/420/480V,5KW	
Target Substrate	PCB Size	Single track：Min 50*50mm，Max 510*550mm Dual track：Min 50*50mm，Max 510*300mm (Can be modified and mounted 1200mm)	
	PCB Thickness	0.5-9.0mm	
	PCB Fixing Method	Pneumatic lifting platform, upper and lower clamps	
Placement Function	Optimal Placement Speed	84000CPH	38000CPH
	Placement Accuracy (CPK)	± 0,035mm(XYZ),CPK ≥ 1.0	± 0,03mm(XYZ), CPK ≥ 1.0
	Supported Component Range	Flying Camera: Minimum Imperial 0201, Maximum L12*W12*H6.5mm	—
		Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H13mm	Fixed Camera: Minimum Imperial 0201, Maximum L40*W40*H25mm
Vision System	MARK Camera Field of View	L20mm*w20mm	
	MARK Camera Type	Area Array 500W	
	Component Camera Type	Flying Camera	—
		Fixed Camera	
Feeding System	Trolley	Support	
	Feeders	Electric Feeder	
	Number of Feeders	100 Slots（8mm）	
	Tape Feeders	Tape:8/12/16/24/32/44/56mm	Tape:8/12/16/24/32/44/56/72/88mm
	Tube Feeders	Number of Slots for a Single Vibration Feeder:	
		4-20mmx3 Tubes,, 30-40mmx2 Tubes，40-50mmX1 Tubes	
	TRAY（Optional）	—	TRAY Cabinet Capacity: L323*W136*H7.5mm, 20 Trays
Control Sectio	X axis	High-precision Linear Motor + Encoder	
	Y axis	Dual-drive Linear Motor + Encoder, Full Closed-loop Control	
	Z axis	High-precision Linear Motor	
	R axis	High-precision Servo Motor	
MES System Integration	MES acquisition	Supports TCP/IP Communication Protocol	
	MES Upload	Supports QR Code/Barcode Recognition and Binding for MES Upload	

NT-L12

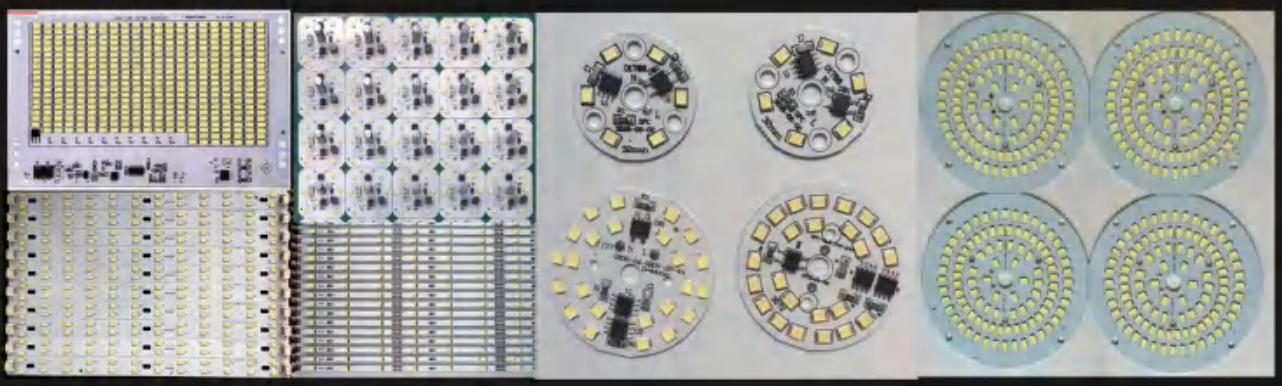
Multi-function Pick And Place Machine

Advantage

- 1.2m Pick And Place Machine
- Up to 70000CPH
- Precision XY Drive System : Featuring dual linear motors, the L12-600/L12-1200 provides higher precision and stability with minimal wear.
- One-piece Molding : enhances mounting stability, ensuring consistent and accurate component placement.
- Area Camera : Simultaneously identify different types of components
- Automatic calibration system : Thermal compensation correction device
- Component placement protection : Nozzle buffer protects components from damage

Feature

- Led Pick And Place Machine Is Suitable For High Speed Production Requirement.



- High-efficiency Configuration Of Equipment To Maximize Production Capacity.

① High-speed Placement Head

12 placement heads works simultaneously to increase the production capacity by nearly 30% compared with the traditional configuration, and can achieve the best production capacity of 70,000CPH

② Moveable PCB transmission

Movable PCB transmission system reduces the waiting time for board transfer and optimizes the placement path.

③ Module camera

Adopt multiple identical independent identification configuration methods, which can identify multiple elements at high speed and synchronously.
It effectively ensures the operating efficiency of the equipment.

④ Electric Feeder

The electric feeder can realize 1/2/4mm pitch feeding to save equipment cost and improve component compatibility.

● High Standard Equipment Makes The Equipment More Stable

① Precision XY Drive System

Featuring dual linear motors, the L12-600/ L12-1200 provides higher precision and stability with minimal wear.

② Advanced Camera and Calibration

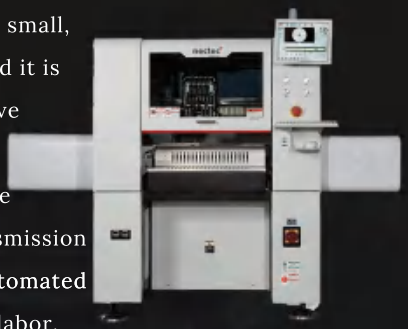
The area scan camera allows simultaneous identification of multiple components, optimizing placement.

③ High-precision Thermal Compensation Calibration Device

High-precision thermal compensation correction device can monitor and automatically correct the placement accuracy in real time.

④ Online LED patch machine:

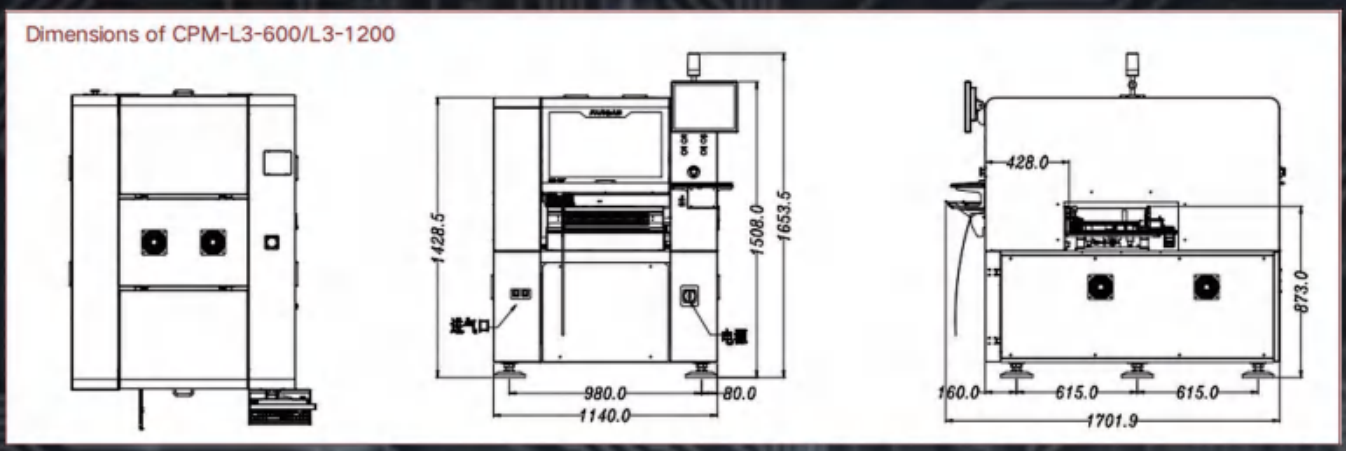
the equipment size is small, the space is small, and it is easy to carry and move (industrial elevators can bear the load).The automatic track transmission design can realize automated production and save labor.



Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

Dimensions of CPM-L3-600/L3-1200



Model Name	Category	NT-L12-600/NT-L12-1200
Name	Equipment Name	Lamp beads specialplacement machine
Placement head	Mounting head model	1212B
	Nozzle spacing	12mm
	Number of nozzles	High-speed placementhead (12 heads)
Equipment size	Length x width x height	1140*1500*1450mm
The main components	Base	High-strength cast ironone-piece molding
	X-arm beam	High-strength aluminumstretch forming
Control section	X-axis	Flat linear motor + gratingruler
	Y-axis	Dual motor linear motor +grating ruler
	Z-axis	Closed loop stepping
	R-axis	Closed loop stepping
Mounting capability	Optimal placement speed(IPC-9850)	70000CPH
	Chip placement accuracy(CPK)	0,10mm(XYZ),CPK ≥ 1.0
	Component size	Minimum size: 0201,maximum size: L12*W12
	Component thickness	18mm
Weight	weight	About 1600K
Electrical Specifications	Gas source	0.5MPa, 150L/min
	Power supply/ Power	AC380/420/480V,2.5KW
PCB conveyor system	Transfer plate track	Mobile single-section track (with transfer function)
	PCB size	Minimum 50*50mm,Maximum 600*400mm,Maximum 1200*400mm
	PCB Thickness	0.4-9.5mm
	PCB fixing method	Pneumatic lifting platform, upper andlower clamps
Feeding system	Number of feeders	37 stations (8mm)
MES system connection	MES Collection	Support TCP / IP communication protocol
	MES Upload	Support QR code / barcode recognition / binding upload MES
Optional accessories	Optional accessories	Offline loader / rearbutton panel

NT-LF

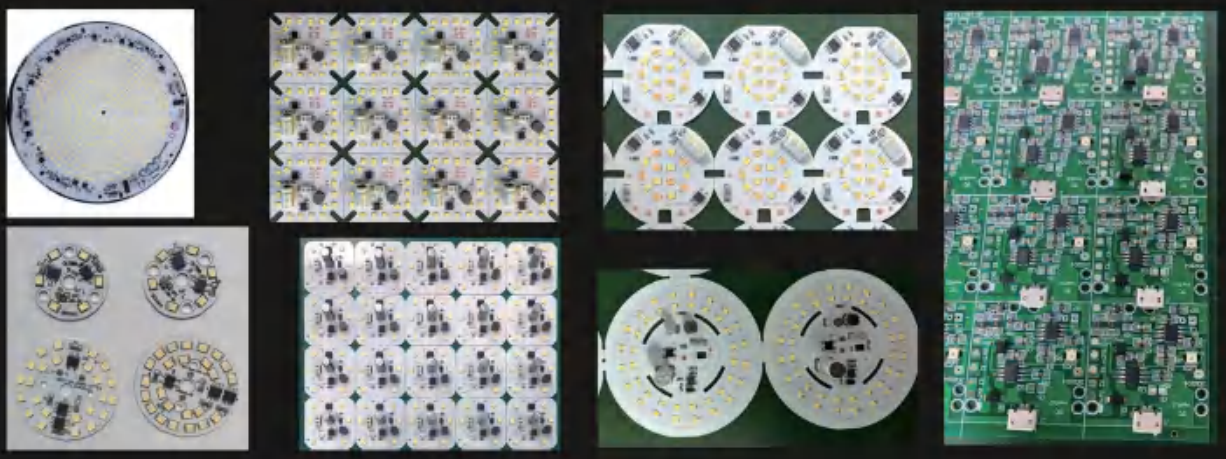
High Speed Pick and Place Machine

Advantage

- Single mounting head solution!
- The highest production capacity and precision of the same type of product, Optimum speed 28000CPH
- XY Driven dual linear motor： The X Y drive linear motor has higher accuracy, less wear, and greater stability.
- Integrated molding machine base：Better mounting stability
- Area array module camera：Synchronize recognition of multiple different types of components
- Automatic calibration system：Thermal compensation correction device
- Component mounting protection：Equipped with nozzle anti buffering function to protect
- components and ensure product quality

Feature

● Suitable fo the following similar products



● Efficient configuration to achieve maximum production

① Multi functional mounting head

The synchronous feeding of a single group of mounting heads can achieve an optimalproduction capacity of 18000CPH whichis nearly 30% higherthan the traditional configuration.

② Reduce transmission system of PCB boards

Movable PCB transmission system reduces the waiting time for board transfer and optimizes the placement path.

③ Module camera

Adopt multiple identical independent identification configuration methods, which can identify multiple elements at high speed and synchronously.
It effectively ensures the operating efficiency of the equipment.

④ Electric Feeder

Lightweight electric feeder can achieve 2/4mmspacing feeding saves equipment costs Improve component compatibility.

● High Standard Equipment Makes The Equipment More Stable

① XY linear motor

XY axis adopts the industry's advanced linear motor configuration, with less wear, higher accuracy, and better stability

② MARK camera

Automatically scan the mounting coordinates to improve the efficiency of wire transfer.

③ High-precision Thermal Compensation Calibration Device

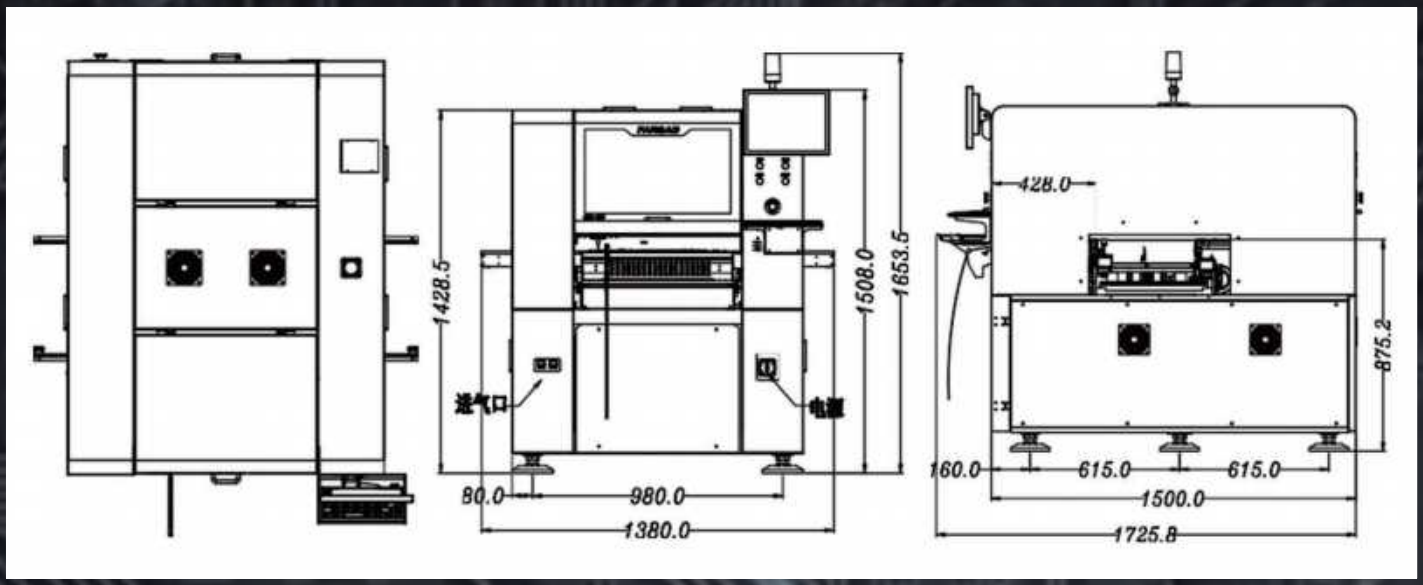
The high-precision thermal compensation correction device can monitor and automaticallycorrect the mounting accuracy.

④ Online LED SMT machine:

The device has a small size and occupies little space, making it easyto move and transport (even industrial elevators can bear weight). Adopting an automatic track transfer design can achieve automatedproduction and save labor.

Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice



Model Name	Category	NT-LF
Name	Equipment Name	DOB SpecializedPick&PlaceMachine
Head	Model of mounting head	0821BL
	Distance between nozzles	21mm
	Number of nozzles	Multi functional mounting head (8 heads)
Equipment size	Length x width x height	2175*1500*1450mm
Main components	Base	High strength cast iron integrated molding
	X Armcrossbeam	High strength aluminum material stretch forming
Controller	X-axis	Flatlinearmotor+gratingruler
	Y-axis	Dual linearmotor+gratingruler
	Z-axis	Closed loop stepping
	R-axis	Closed loop stepping
Mounting ability	Best placement speed（IPC-9850）	28000CPH
	Placement accuracy（CPK）	±0,10mm(XYZ), CPK≥1.0
	Component size	Minimum imperial 0201，Maximum L20*W20
	Component thickness	24mm
Weight	weight	Approx. 1600KG
Electrical Specifications	Gas source	0.5MPa, 150L/min
	Power supply/ Power	AC380/420/480V,2.5KW
PCB conveyor system	Transfer board track	Fixed three-stage track (with board waiting function)
	PCB size	Min 50*50mm，Max 600*400mm（Single segment mounting) Max 1200*400mm（Two segment mounting)
	PCB Thickness	0.4-9.5mm
	PCB fixing method	Pneumatic lifting platform, upper andlower clamps
Feeding	Quantity of feeders carried	20 Slots（8mm）
MES system integration	MES Collection	Support TCP / IP communication protocol
	MES Upload	Support QR code/barcode recognition/binding and uploading to MES
Optional accessories	Optional accessories	16 position nozzle exchanger, fixed rear tray, portable front tray, offline feeding cart, rear button panel

NT-LT

High Speed Pick and Place Machine

Advantage

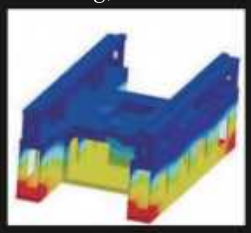
- The new lens mounter is widely
- used in TV backlight, LED lighting and other fields to ensure the accuracy and stability of the mount, while increasing the production capacity by nearly 50%.
- Configuring the Flying Camera Recognition System:Reduce recognition time
- New vibration feeding device:Reduced space requirements
- Can be customized according to customer requirements:Vibrator, nozzle and component identification information
- Automatic calibration system:Thermal compensation calibration device
- Optional Parts:Line scan camera / module camera

Feature

● High-speed integrated placement head configuration makes the equipment more high-speed and practical

① One-piece molding frame

The frame is made of one-piece casting, with 365 days of natural aging to relieve stress, and high-temperature annealing process to prevent thermal deformation and deformation caused by high-speed movement.



② High-speed response and high-precision full closed-loop control

The X and Y axes are driven by linear motors and grating rulers to achieve high-speed response and high-precision full closed-loop management.

③ High-precision thermal compensation calibration device

High-precision thermal compensation correction device can monitor and automatically correct the placement accuracy in real time to ensure the high-speed operation stability of the equipment.

④ High precision placement head

0821R: Lightweight 8-nozzle high-precision placement head, 8 R-axes independently controlled, high rotation accuracy, can mount TV lenses, maximum size 17x17mm, thickness 13mm.

⑤ Multifunctional placement head

Lightweight 8-mouth high-speed placement head, capable of mounting bipedal lenses, triangular lenses, wall washer lenses, and other special-shaped lenses, with an optimal production capacity of 22000CPH, maximum size 17x17 mm, thickness 13mm

⑥ Magnetic suspension linear motor and grating ruler

Adopting the industry's most advanced linear motor configuration, the linear motor has less wear, higher precision, longer service life, and more fully guarantees the stability of the equipment.

● Multiple functions to ensure stable production of equipment

① Vacuum adsorption system

The new vacuum adsorption system significantly increases the vacuum flow rate of the suction nozzle, making suction more stable and reliable.

② Conveyor

It adopts optical fiber induction board stop, and the transmission belt adopts synchronous belt to avoid belt slippage. The newly designed board transmission mechanism reduces the edge width of the PCB clamping plate to 3mm.

③ XY linear motor

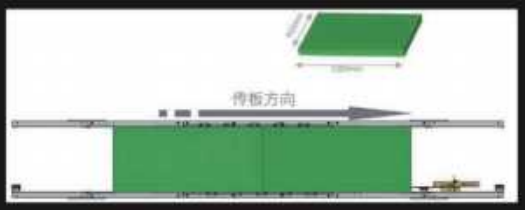
XY axis adopts the industry's advanced linear motor configuration, with less wear, higher accuracy, and better stability

④ Module Camera

8 independent cameras, each corresponding to a suction nozzle, can realize the simultaneous identification of 8 materials without stopping and slowing down during the Y-axis movement after picking up, and greatly improve production efficiency by the path with the least X, Y axis movement, which is more than 80% more efficient than ordinary cameras.

⑤ Supports extra long boards

Optimize placement area distribution 1200mm PCB production

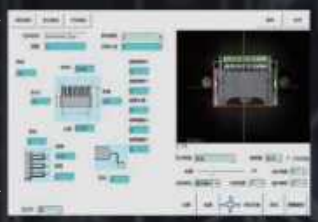


⑥ Compatible components

● Intelligent software system

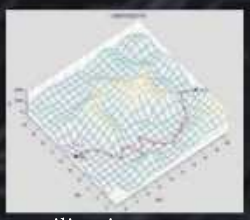
① Free editing of non-standard devices

Newly developed intelligent digital centering algorithm enables one-click free editing of non-standard components/special-shaped and irregular components.



② Path Optimization

Newly added intelligent algorithms such as ant colony algorithm/ cluster analysis/AI deep learning can automatically optimize the best path for suction and placement, and achieve the best equipment utilization rate.



③ Coordinate import

One-click import of coordinates: One-click import of mounting coordinates can be achieved through text files such as text format and EXCEL files.

④ LAN Management

LAN Management， Component database andEight head placement head Online machine databases are updated through communication. LAN transmission is realized to prevent virus transmission via USB flash disk

● MES Management System

① Support MES system collection

Support MES system collection, through which the MES system can realize intelligent management of equipment production, quality, efficiency, etc., and improve the manufacturing execution capability of enterprises

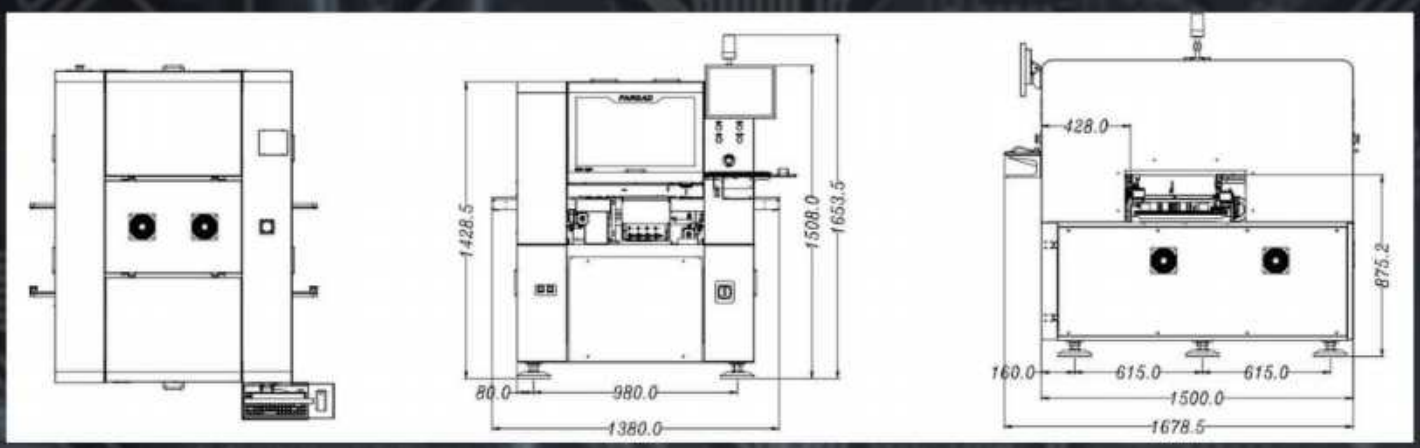
② Vacuum adsorption system

The blue light camera can automatically capture and save component coordinates, which doubles programming efficiency

Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

Model Name	Category	NT-LT
Name	Equipment Chinese Name	Lens mounte
Head	Placement Head	0821BL
	Model Nozzle Spacing	21mm
	Number of nozzles	Multifunctional placement head (8 heads)
Equipment size	Length x width x height	1140*1500*1450mm
Main components	Base	High strength cast iron integrated molding
	X Armcrossbeam	High strength aluminum material stretch forming
Controller	X-axis	Flatlinearmotor+gratingruler
	Y-axis	Dual linearmotor+gratingruler
	Z-axis	Closed loop stepping
	R-axis	Closed loop stepping
Mounting ability	Best placement speed（IPC-9850）	28000CPH
	Placement accuracy（CPK）	±0,10mm(XYZ),CPK ÿ 1.0 Minimum British 0201,
	Component size	Maximum L20*W20
	Component thickness	24mm
Weight	weight	Approx. 1600KG
Electrical Specifications	Gas source	0.5MPa, 150L/min
	Power supply/ Power	AC380/420/480V,2.5KW
PCB conveyor system	Transfer board track	Fixed three-section track (with standby function) Minimum
	PCB size	Min 50*50mm，Max 600*400mm（Single segment mounting） Max 1200*400mm（Two segment mounting）
	PCB Thickness	0.4-9.5mm
	PCB fixing method	Pneumatic lifting platform, upper and lower clamps
Feeding	Quantity of feeders carried	20 Slots（8mm）
MES system integration	MES Collection	Support TCP / IP communication protocol
	MES Upload	Support QR code/barcode recognition/binding and uploading to MES
Optional accessories	Optional accessories	16 position nozzle exchanger, fixed rear tray, portable front tray, offline feeding cart, rear button panel



NT-NB

Odd Shape Pick And Place Machine

Advantage

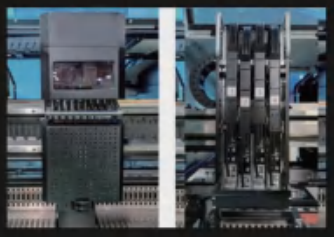
- High-end Odd Shape Pick And Place Machine : The Placement Speed For Components Capacity Is Up To 8000cph
- Built-in Vacuum Pump Can Adapt All Kinds Of Odd Shape Components : The vacuum pump equipped with a stable balancer,which is suitable for the production of various odd shape components of different sizes.
- Support The Simultaneous Production Of DifferentTypes Of Odd Shape Components : Configurable high-speed eight heads /multi-function four heads fordifferent types of components
- Maglev Motion Control : Magnetic levitation motion control ensures high-speed and high-precisionoperation of equipment
- Self-developed Software Is Perfectly Suitable ForDomestic And International Markets : Touch screen operation with offline programming system and built inEnglish interface makes the equipment user friendly to operate.
- Support Mes System : Through the MES system users can track equipment production and quality management which helps toimprove the assembly production.

Feature

● The Head Is Optional For Wide Range Of Odd Shape Components

① Flexibility

High-speed /Multfunction Placement heads are configured accordingto customer component types.

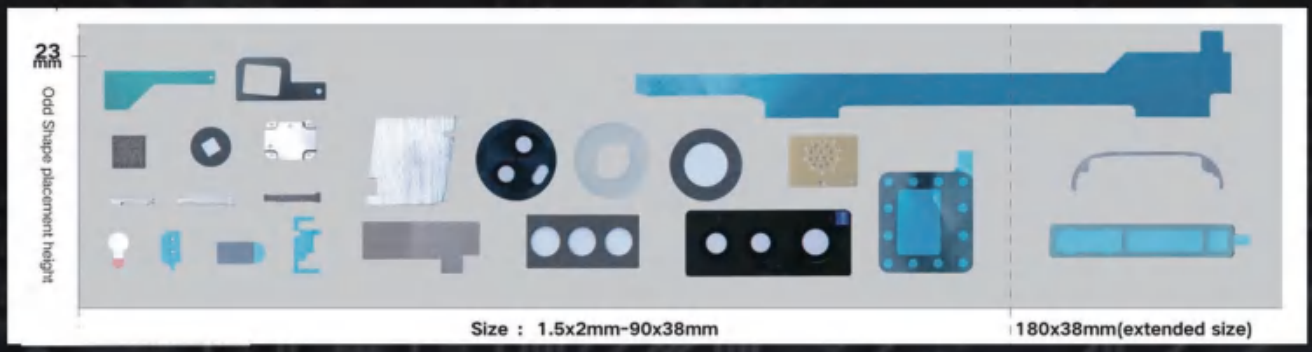


② Universal CompatibilityWith Diverse Feeders

Universal compatibility with a varietyof feeders such as 60mm and100mm,which are suitable forvarious production needs.

③ Suitable For Odd Shape Components.

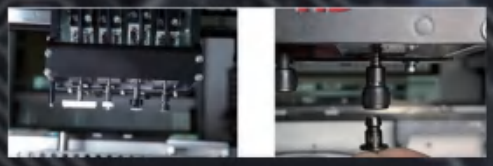
Suitable for labels,adhesives,foam,conductive adhesive/cloth,Mylar,copper foil,thermally conductive silicone,、graphitesheet,3D steel sheet,headphone components,mobile phone case materials,glass panel texture film,battery cover, 3Cproducts and Accessories.



● Advanced Configuration Ensure More Stable Equipment Performance

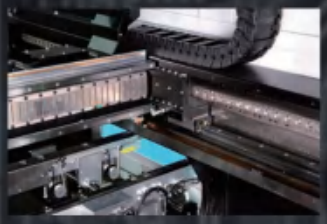
① Independent Z Axis Control

By the simple creation of the component shape and automatic preservationof the recognition data,machine can recognize the complex componentsrapidly.



② High Precision Reliability

Imported XY drive and magneticlevitation linear motor with grating ruler.



③ High-precision ScanningCamera

Imported linear scanning camerascan meet the inspection requirementsof high-resolution components, andrealize the various complex compo-nents simultaneously.

④ Thermal Compensation Calibration

monitor and automatically correct theplacement accuracy in real time toensure the stability of the high-speedoperation of the equipment.

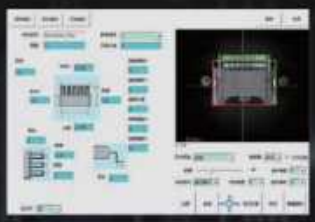
④ One-piece Molding Rack

A cast one-piece frame undergoes for 365 days of natural aging to relievestress , and adopts a high-temperature annealing process to prevent thermal deformity and thermal deformation ofhigh-speed movement.

● Intelligent software system

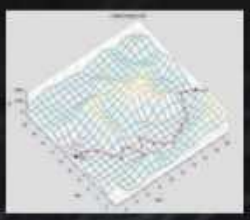
① Non-standard Components Can Be Edited.

Newly developed intelligentdigital alignment algorithmused to realize non-standard components/odd-shaped irregular components by thefunction of one-click editing.



② Path Optimization

To achieve the best ment utilization rate,theIntelligent algorithms such asant colony algorithm/clusteranalysis/Al deep learning arenewly added to realizeautomatic optimization of thebest path for picking andplacement.



③ Coordinate import

One-click import of coordinates: One-click import of mounting coordinates can be achieved through text files such as text format and EXCEL files.

④ LAN Management

Local area network management,software database and online machine database inter-communication update, realizing localarea network transmission to prevent virus transmission.

⑤ Support Mes System Collection

MES system can realize intelligent management of equipment production,quality,efficiency,etc.Improve manufacturing efficiency.

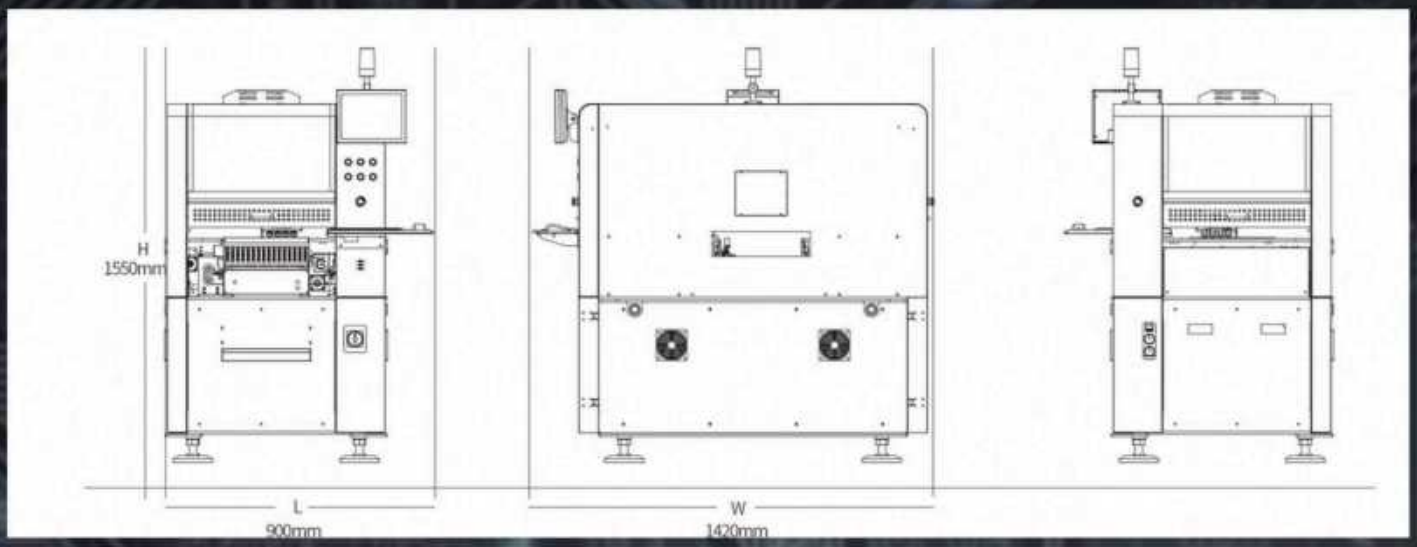
⑥ Support Mes Upload

Automatic identification of QR code or bar-code after placement done,then uploads the data to MESserver to achieve traceability.

Parameters

※ Due to improvement requirements, specifications and appearance may change without prior notice

Model Name	Category	NT-NB
Size	L*W*H	900*1420*1550mm
	Gross weight	1000KG
	Min and Max PCB size	Min50*50mm,max330*420mm (option 450*500mm)
	PCB thickness	0.5MM-5mm
	PCB Fixture method	Upper and lower splint
Operating System	Windows system	Windows 7/10
	Control System	Self Developed Software
	Display input device	Touch screen +keyboard,mouse
Placement Capability	Mounting speed	3000CPH-8000CPH
	Number of placement heads	4/8 heads
	Mounting accuracy	±0.035mm(excluding material tolerance)
	Mounting height	0.1-8MM (automatic conversion,30mm optional)
	Mounting angle	0-360degrees
	Size of mountable Components	Standard models are applicable:1.5*2mm-90*38mm Applicable to enlarged models:10mm*5mm-180mm*38mm Almost all cold paste products can be attached,including adhesive tape film,special-shaped reinforcement,3D steel sheet,label,foam,glass and special-shaped components,etc.
Visual System	Camera Identificaton	Linear scan camera&area scan camera
Transmission System	Transmission direction	left-right,right-left,left-left,right-right
	Delivery method	automatic
	Converyor height	900±20mm
Electrical Specifications	Air pressure	5.0KG comes with vacuum pump
	Input power	AC 380/420/480V 50hz
	Power	1.5KW
Feeding System	Use environment	24.5℃±2℃
	Number of feeders that can be placed	2 feeder for 100mm wide 4 feeder for 60mm wide SMT standard feeder can be 21 stations



NT-8L

Intelligent Eight-head High-speed Surface Mount Technology (SMT) Machine

Parameters

Model	NT-8L				
Patch accuracy	0.05mm		Repeat loading accuracy	0.05mm	
positioning accuracy	0.01mm		Continuous working hours	Can work continuously> 24H without shutdown	
Patch speed	10000-12000pcs/h				
Patch area	72F 430*420mm without tray --50*50mm		Scope of patch	0201,0402,0603,0805,1206, LED beads, diode, triode, SOT, 30 * 30mm, pinspacing greater than 0.3mm GFP, BGA, etc., acceptable visual customization of alien components	
	72F 430*300mm with tray --50*50mm				
	80F 430*350mm without tray --50*50mm				
	80F 430*220mm with tray --50*50mm				
Pending head system	The number of suction mouth	8	Feeder system	Quantity of feeder	72/80 position (Take 8mm feeder)
	Nozzle type	JUKI ORUI is applicable		Types of feeder	Electric feeder, pneumatic feeder , vibration feeder, IC tray, etc
	Component Angle Support	±180°		Feeder type	Applicable to the YAMAHA CL series feeder
	Available element height	≤7mm		IC material disc digits	3 plates (286 bits)
	Take way	Double head with		IC disk size	L460*W350mm
	Vacuum buffer range	4.5mm		Security system	Feeder to turn up the alarm function
	Maximum trip on the Z axis	20mm		Method of feeding and feeding	Automatic layout of material distribution, automatic positioning of material collection coordinates
The PCB board transfer system	Baseline thickness	3-5mm process edge is required in the automaticmode	Gas supply system	Vacuum source	Double coil vacuum generator (with high speed break of vacuum failure)
	Orbital regulation	Manual / electric automatic regulation		Vacuum mechanism	High-speed, high-flow vacuum generator for active destruction
	Transmission mode	Default from left to right board, support both sidesof the connection function, three-step board		Bleed pressure	0.5-0.7mp
				Gas source requirements	Oil-water separation device requires no less than 60L external, dust filtration and pressure stabilization device
	Security system	Anti-static conveyor belt, transfer board sensor			
kinetic control system	Operating system (OS)	Based on the windows system, we independently developed the intelligent operating system	Vision system	Identify equipment	1 Mark camera, 8 high-speed recognition camera, 1 high-precision camera
	Control the host	Intel high performance processor control host		Display	A 17-inch industrial control display
	Driving system	High-speed DSP drive, an AC servo motor		How to take photos	Fixed shot flight pair center
	security system	Emergency stop button, three-color alarm light, open cover, slow speed / stop		RM	8 heads identify simultaneously and take materials simultaneously
	XY maximum stroke	645mm*680mm		Mark point identification	Manual / fully automatic positioning
	XY drives the track	Linear guide rail + rolling / grinding wire rod(optional)		Security detection	Leakage material automatic correction, component Angle automatic correction, invalid material automatically thrown
	XY motor pattern	Intelligent curve acceleration and deceleration linear linkage, with straight line insertion algorithm		Programming method	Import the coordinate file, one-key automatic programming, the optimal path planning
	Exercise protection	High wear-resistant tank chain and flexible cable		Compatible file format	The CSV / TXT file format can be imported directly
Circuit protection	Leakage protector, thermosetting shell, insoluble not melt;excellent interface, no cracking, leakage prevention		Power	AC 220V 50/60Hz 1000W	
Outline dimension	(Before packaging)L1375*W1420*H1400mm		Weight	(Before packaging) 500kg	
	(After packaging)L1470*W1580*H1550mm			(After packaging) 590kg	

NT-6L

Six-head intelligent high-speed mount machine

Parameters

Model	NT-6L				
Patch accuracy	0.05mm		Repeat loading accuracy	0.05mm	
positioning accuracy	0.01mm		Continuous working hours	Can work continuously> 24H without shutdown	
Patch speed	9000-10000pcs/h				
Patch area	~~430*3600mm without tray --50*50mm~~ ~~430*240mm with tray --50*50mm~~		Scope of patch	0201,0402,0603,0805,1206, LED beads, diode, triode, SOT, 30 * 30mm, pinspacing greater than 0.3mm GFP, BGA, etc., acceptable visual customization of alien components	
Pending head system	The number of suction mouth	6	Feeder system	Quantity of feeder	64 position (Take 8mm feeder)
	Nozzle type	JUKI ORUI is applicable		Types of feeder	Electric feeder, pneumatic feeder , vibration feeder, IC tray, etc
	Component Angle Support	±180°		Feeder type	Applicable to the YAMAHA CL series feeder
	Available element height	≤7mm		IC material disc digits	4 plates (384 bits)
	Take way	Double head with		IC disk size	L650*W330mm
	Vacuum buffer range	4.5mm		Security system	Feeder to turn up the alarm function
	Maximum trip on the Z axis	20mm		Method of feeding and feeding	Automatic layout of material distribution, automatic positioning of material collection coordinates
The PCB board transfer system	Baseline thickness	3-5mm process edge is required in the automaticmode	Gas supply system	Vacuum source	Double coil vacuum generator (with high speed break of vacuum failure)
	Orbital regulation	Manual / electric automatic regulation		Vacuum mechanism	High-speed, high-flow vacuum generator for active destruction
	Transmission mode	Default from left to right board, support both sidesof the connection function, three-step board		Bleed pressure	0.5-0.7mp
				Gas source requirements	Oil-water separation device requires no less than 60L external, dust filtration and pressure stabilization device
	Security system	Anti-static conveyor belt, transfer board sensor			
kinetic control system	Operating system (OS)	Based on the windows system, we independently developed the intelligent operating system	Vision system	Identify equipment	1 Mark camera, 6 high-speed recognition camera, 1 high-precision camera
	Control the host	Intel high performance processor control host		Display	A 17-inch industrial control display
	Driving system	High-speed DSP drive, an AC servo motor		How to take photos	Fixed shot flight pair center
	security system	Emergency stop button, three-color alarm light, open cover, slow speed / stop		RM	6 heads identify simultaneously and take materials simultaneously
	XY maximum stroke	630mm*680mm		Mark point identification	Manual / fully automatic positioning
	XY drives the track	Linear guide rail + rolling / grinding wire rod(optional)		Security detection	Leakage material automatic correction, component Angle automatic correction, invalid material automatically thrown
	XY motor pattern	Intelligent curve acceleration and deceleration linear linkage, with straight line insertion algorithm		Programming method	Import the coordinate file, one-key automatic programming, the optimal path planning
	Exercise protection	High wear-resistant tank chain and flexible cable			
Circuit protection	Leakage protector, thermosetting shell, insoluble not melt;excellent interface, no cracking, leakage prevention			Compatible file format	The CSV / TXT file format can be imported directly
			Power	AC 220V 50/60Hz 800W	
Outline dimension	(Before packaging)L1310*W1360*H1450mm		Weight	(Before packaging) 438kg	
	(After packaging)L1430*W1410*H1630mm			(After packaging) 530kg	

SIPLACE CA2

Product information

1. Hybrid placement system

①Dual process integration: SIPLACE CA2 is the first hybrid device that combines SMT placement with semiconductor chip bonding. It can process SMD components from tape (such as resistors, capacitors) and bare chips directly from cut wafers (such as flip chips) in the same process without the need for additional equipment.

②Placement speed: supports placement of 50,000 chips (bonding process) or 76,000 SMD components (tape placement) per hour, with an accuracy of 10 μm @ 3, suitable for high-density advanced packaging (such as SiP system-level packaging).

③Parallel processing technology: Through the buffer storage module, 16 new chips are pre-fetched while the placement head is working, realizing parallel processing of wafer fetching and placement operations, significantly improving efficiency. For example, the flip chip processing speed can reach 40,000 pieces/hour.

2. Wafer handling and feeding system

① Wafer replacement system: supports fast switching of 50 different wafers, with a replacement time of only 6.5 seconds, significantly reducing downtime. Direct wafer feeding eliminates the taping step, saves taping material costs (up to 800 kilometers of waste tape per year), and improves sustainability.

② Feeding compatibility: compatible with 8mm to 56mm electric feeders, supports tube-mounted, tray-mounted components, and JEDEC standard trays.

③ Optional wafer system or roll-to-roll trolley (COT) to flexibly adapt to different production needs.

3. Vision and inspection system

① High-precision recognition technology:

② Laser recognition: covers real-time detection of special-shaped components from 0402 (01005 imperial) to 50mm×150mm to ensure placement accuracy.

③ Image recognition (VCS camera): supports 3-color lighting technology, enhances the recognition ability of fine structures (such as BGA solder balls), and has an accuracy of ±30μm.

④ Tracking capability: provides bare chip-level tracking function, records the full process data of each chip from the wafer position to the PCB mounting position, and meets the high traceability requirements of automotive electronics.

4. Motion control and automation

① High-speed linear drive system: The X/Y axis uses high-precision linear motors and magnetic suspension technology, combined with a 0.001mm resolution magnetic scale to achieve high-speed (acceleration optimization) and high-stability mounting.

② Dual servo Y-axis drive: optimizes track transmission, reduces vibration, and improves the accuracy of long substrate mounting.

5. Software and open interface

① Intelligent software suite: JaNets production management system: supports offline programming (CAD import), path optimization and simulation debugging, and shortens line change time.

②WORKS workshop management suite: provides functions such as material loading verification and logistics optimization to improve overall production efficiency.

③Open communication interface: supports IPC-CFX and SECS/GEM standard interfaces, achieving seamless integration with MES/ERP systems and meeting the data communication needs of smart factories.

Parameters

Placement speed	SMT up to 74,000 cph
	Die attach from Wafer up to 54,000 cph
	Flip chip from Wafer up to 51,000 cph
Standard accuracy	20μm @ 3 sigma
Accuracy class	15μm @ 3 sigma
Accuracy class	10μm @ 3 sigma
PCB dimensions single lane conveyor (l x w):	up to 620 mm x 700 mm 20μm@ 3 sigma
	up to 620 mm x 700 mm 15μm @ 3 sigma
	up to 620 mm x 700 mm 12μm @ 3 sigma(per 300 mm x 300 mm quadrant)
	up to 300 mm x 300 mm 10μm @ 3 sigma
PCB dimensions dual lane conveyor (l x w):	up to 375mm x 260mm 20μm @ 3 sigma
	up to 375mm x 430mm 20μm @ 3 sigma (dual as single lane mode)
	up to 250mm x 100 mm 15μm @ 3 sigma
	up to 250 mm x 100 mm 10μm @ 3 sigma
Machine dimensions (l x w x h)	2.56m * 2.50m * 1.85 m

SIPLACE SX

APMPT SIPLACE | Cantilever modular placement machine

Product information

SIPLACE SX is the first placement solution that is fully scalable with demand thanks to its unique interchangeable gantries. A great way to add capacity when needed or reduce capacity when things slow down. We call it ASMPT Capacity-on-Demand.The SIPLACE SX-Series puts scalability and flexibility at the top of the list. Users are able to introduce new products quickly, change setups without stopping the line and produce any batch size with high utilization and efficiency.Whether in automotive, automation, medical, telecommunication or IT infrastructure – the ASMPT SX-Series meets all requirements in terms of quality, process reliability and speed.

1. Modular cantilever and placement head design Cantilever modularity: SIPLACE SX is the only placement platform in the world that supports rapid capacity adjustment by adding or removing cantilevers. Users can increase or decrease the number of cantilevers within 30 minutes, flexibly respond to changes in capacity requirements, and protect existing investments. It can be configured as a single cantilever (SX1) or a dual cantilever (SX2), with strong scalability and no need to change the production line layout.

①Diversified placement heads: SpeedStar CP20: supports 0201 metric (0.2×0.1mm) to 8.2×8.2×4mm components, with a placement speed of 43,250 CPH and an accuracy of ±35μm @ 3σ, suitable for high-speed and high-precision scenarios.

② MultiStar & TwinStar: handle large and complex components (up to 50mm×150mm, weighing 240g), with a placement force of up to 100N, and supports THT processes (such as pin bending).

③ CPP placement head: supports picking, collecting, and mixed mode switching, and adapts to different component types (height ≤15.5mm, weight ≤20g).

2. Vision and inspection system　High-resolution image processing: The new camera system supports multi-angle lighting and multiple exposures, generates 3D images to optimize process control, and can detect complex features such as pin status and component coplanarity.

① Through LED center positioning technology, components are aligned from the top surface to improve the placement accuracy of special-shaped components (such as BGA, QFP).

② Laser recognition: Real-time tracking of component height and position, reducing errors caused by dirty or worn nozzles, supporting non-contact placement, and protecting sensitive components.

3. Feeder system　Feeder capacity and compatibility: Standard 120 8mm tape feeder stations, supporting small batch multi-variety or large batch production.

① Open third-party feeder interface: allows rapid integration of special feeders (such as GlueFeeder X, Measuring Feeder X) to expand processing capabilities.

② Supports tube-mounted and tray-mounted components, as well as JEDEC standard trays, and combines Smart Feeder technology to achieve automatic material connection and material shortage warning.

4. PCB processing capabilities

① Substrate size and transmission: Standard support for 50×50mm~610×590mm PCBs, and after expansion, it can handle up to 1,525mm long substrates (such as LED light boards), compatible with flexible boards and rigid boards.

② Smart transmission track module: Equipped with automatic ejector support (Smart Pin Support) to reduce substrate transmission vibration and improve mounting stability.

5. Software and intelligent functions

① Intelligent operation: Nozzle ID management: Automatically identify nozzle status, support intelligent selection and replacement of 320 nozzle positions, and avoid incorrect operations.

② Predictive maintenance: Sensors monitor equipment status in real time, provide maintenance warnings, and reduce downtime risks.

③ Intelligent operator guide: Wizards are used to assist in solving component mounting problems (such as height calibration and reference point setting) and shorten debugging time.

④ Open Automation Interface: Supports IPC-CFX, IPC-9852-Hermes and other protocols, seamlessly integrates MES/ERP systems, and achieves data transparency and traceability (such as automotive electronics).

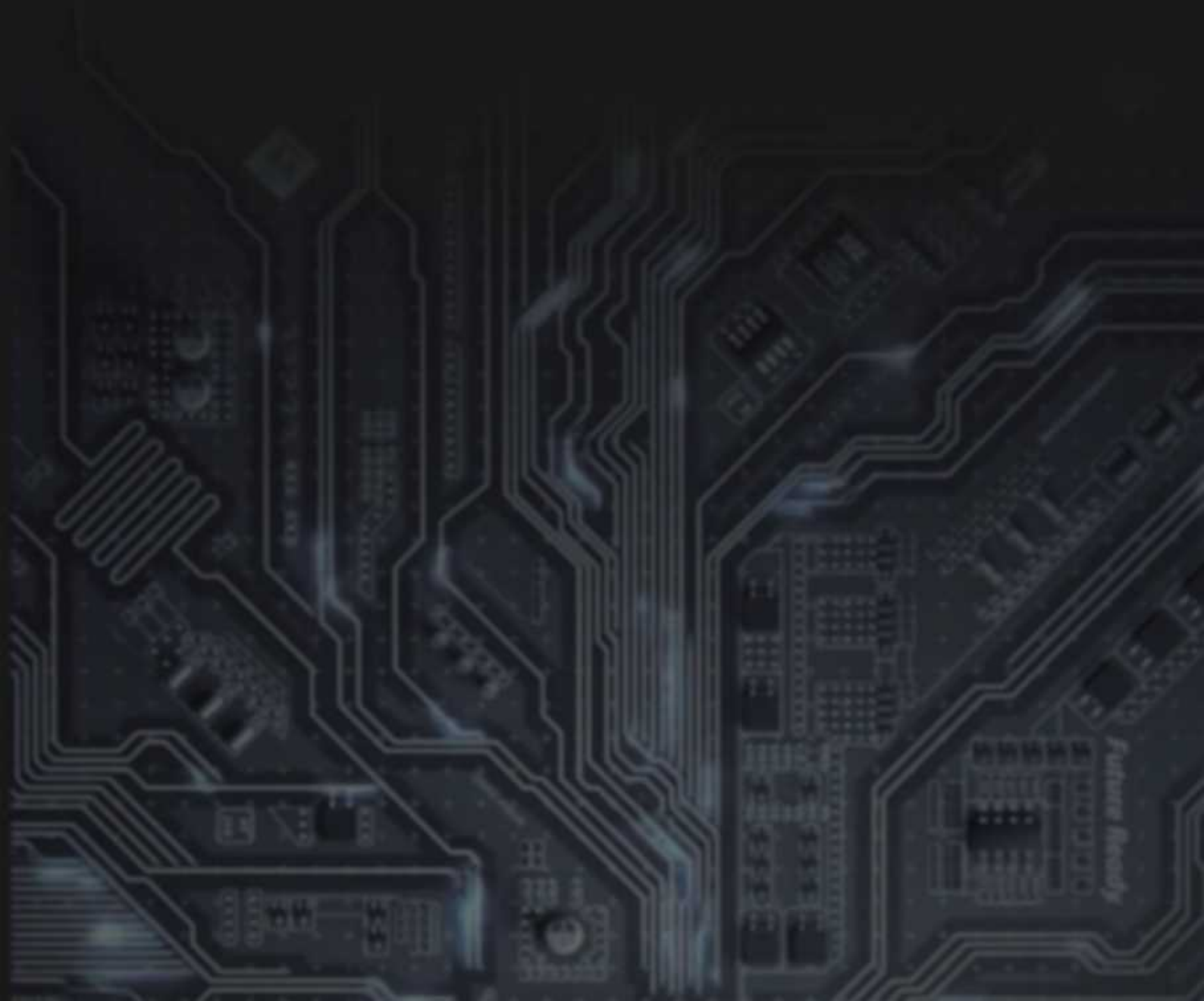
6. Scalability and application scenarios

① Odd-shaped component processing kit (OSC): can mount odd-shaped components (such as heat sinks, connectors) with a size of 200×110×25mm and a weight of 160g, and supports automatic feeding and inspection steps.

② Automotive electronics optimization: Combined with the DEK TQ L printing platform, it meets the needs of high-precision and high-reliability SMT production and supports full-process data traceability.

Parameters

Technical data*	SIPLACE SX1	SIPLACE SX2
Placement speed	43,000 cph	86,500 cph
Placement speed(IPC)	33,000 cph	66,000 cph
Feeder capacity	120 x 8mm slots	
Component spectrum	0201(metric) to 200 mm x 110 mm x 50 mm	
Board size	50 mm x 50 mm to 1,525 mm x 560 mm	
Machine dimensions (L x W x H)	1.5mm x 2.8m x 1.8m	
Placement heads	Placement Head CP20P2, Placement Head CPP, Placement Head TH	
Placement accuracy	22 µm @ 3 σ (with Placement Head TH)	
Conveyors	Single-track conveyor, flexible dual-track conveyor	



SIPLACE TX

ASMPT SIPLSCE TX | High Speed Component Placement Machine

Product information

The compact SIPLACE TX modules make it very easy to scale your lines up or down. Optimizing each line is less of an undertaking, because getting the perfect balance between requirements and the number of machines is easier than ever.No matter with how many modules you start your line – you can increase its performance in steps of just 1 meter (3.3 feet) or 78,000 cph by adding more SIPLACE TX modules.Maximum accuracy – guaranteed Extremely fast and accurate: With up to 22 µm at 3 sigma, the new SIPLACE TX modules operate with top accuracy.Technological breakthrough: The SIPLACE TX is capable of placing super-fine-pitch 0201 (metric) components at highest speed.This unique combination of accuracy and record-breaking speed makes the SIPLACE TX the clear winner in the race for high-volume 0201 placements.But that's not all. No matter how many components you place, our improved control and head technologies protect the machine's performance and accuracy for years to come.Extremely powerful and designed for the high-volume placement of future component generations, the SIPLACE TX modules deliver the level of investment protection electronics manufacturer want and need for their Smart SMT Factory.

1. Placement head and identification system

① Multi-nozzle high-speed placement head: SpeedStar CP20: supports 0201 metric (0.2×0.1mm) to 8.2×8.2×4mm components, with a theoretical speed of 93,000 CPH (maximum accuracy 20μm).

② Dual cantilever configuration: Some models (such as TX micron) are equipped with dual placement heads, and the placement speed is increased to 96,000 CPH (dual-head collaborative operation), supporting 26 components per second.

③ Dynamic pressure control: Automatically adjust the placement pressure (1.0N~15N) according to the component type, adapting to the non-destructive placement of sensitive components (such as thin chips, flip chips).

④ Laser and visual recognition: LNC laser sensor: Real-time detection of component position, angle and height, with an accuracy of ±0.05mm (Cpk≥1), supporting on-the-fly recognition to reduce downtime.

⑤ High-resolution image processing: Blue light technology is used to enhance image contrast, support BGA solder balls, chip cracks and other fine structure detection, meet ISO 7 clean room standards.

2. Feeder system

①Mixed feeding compatibility: Supports 8mm to 56mm electric feeders, tube-mounted, tray-mounted components and JEDEC standard trays, with a maximum feeder capacity of 120 stations (calculated based on 8mm belt type).

②SIPLACE Tray device: Can accommodate 82 JEDEC trays or 41 wide trays (355×275mm), support non-stop feeding, and improve continuous production efficiency.Smart Feeder technology: Automatic material connection and material shortage warning, combined with buffer and main storage area design, reduce manual intervention.

3. PCB processing capabilities

①Substrate size expansion: Standard support for 300×240mm substrates (accuracy 15μm@3σ), long board options extended to 590×460mm, compatible with flexible boards, curved boards and PCBs with a carrier height of up to 20.5mm.

②The multifunctional conveying system supports J-boat carriers and JEDEC trays, and is suitable for high reliability requirements such as automotive electronics.

③Motor-driven support table: reduces substrate transmission vibration, improves mounting stability, and shortens fixing time.

4. Software and intelligent functions

①Open automation interface: supports IPC-CFX, IPC-HERMES-9852 protocols, seamlessly integrates MES/ERP systems, and realizes full-process data traceability (such as automotive electronics).

②JaNets production management system: supports offline programming, path optimization and simulation debugging, and shortens line change time.

③Predictive maintenance and diagnosis: Sensors monitor equipment status in real time, provide maintenance warnings, and reduce downtime risks.

5. Technical advantages and application scenarios

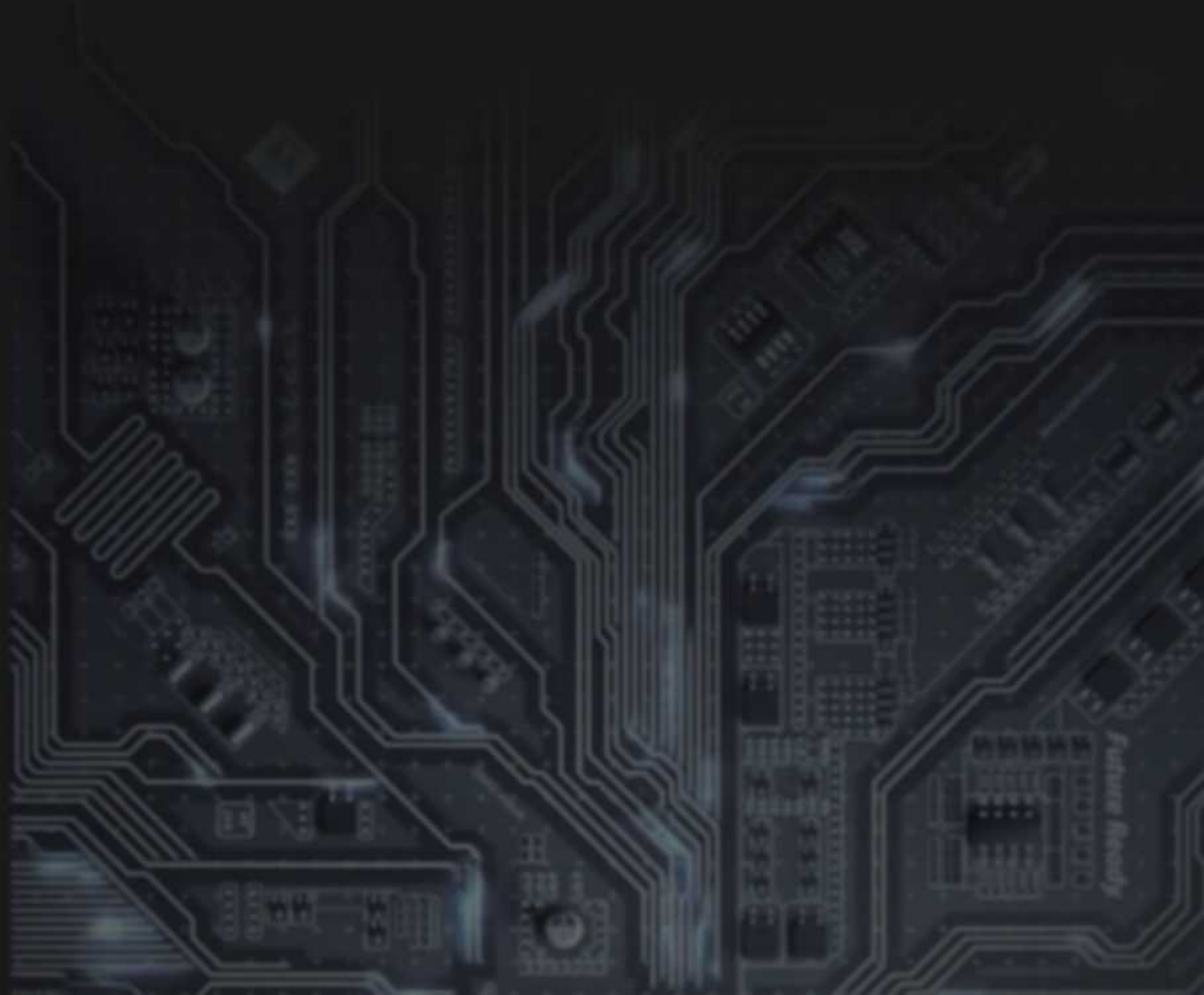
①SiP production optimization: single machine integrates SMT high-speed mounting (93,000 CPH) and chip bonding process (62,000 CPH@10μm accuracy), suitable for the production of SiP modules such as smartphones and smart watches. Supports precise and dense arrangement of passive SMD components, with a minimum pitch of 50μm, to meet high-density packaging requirements.

②High reliability of automotive electronics: Provides material-level traceability to ensure production data transparency, passes SEMI S2/S8 certification, and adapts to harsh environmental requirements.

③Function expansion of end-of-line machine: Equipped with TwinHead placement head to handle special-shaped components (maximum 200×110×25mm, weight 160g), replaces robots or man

Parameters

	SIPLACE TX1/TX2		SIPLACE TX2i
Machine dimensions (LxWxH)	1.00mx2.35mx1.45m		1.00mx2.23mx1.45m
Placement heads	SIPLACE SpeedStar(CP20P), SIPLACE MultiStar(CPP),SIPLACE TwinStar		
Placement speed (benchmark rating)	Up to 78,000 cph		
Placement accuracy	Up to 22 µm at 3 sigma		
Component spectrum	0201 (metric) to 45 mm x 55 mm		
PCB dimensions (LxW)	45 mm x 45 mm to 375 mm x 260 mm (dual conveyor) 45 mm x45 mm to 375 mm x 460 mm (dual conveyor in single mode)		
Feeder slots	up to 80 x 8 mm		
Typical power consumption	1,9 kW (2 x SIPLACE SpeedStar)		
Air consumption	120 Nl/min (2 xSIPLACE SpeedStar)		
Placement heads	SIPLACE SpeedStar (CP20P)	SIPLACE Multi Star	SIP LACE TwinStar
Component spectrum	0201 (metric) to 6 mm x 6 mm	01005 to 50 mmx 40 mm	45 mmx55 mm
Component height	4mm	11.5 mm	25 mm
Placement accuracy (3 sigma)	25 µm	34 µm	22 µm
Max. Speed	39,000cph	24,000 cph	5,500 cph



SIPLACE X S

ASMPT SIPLACE X S | High-speed placement

Product information

The SIPLACE X S is benchmark in high-volume production
Absolute precision and maximum performance have made the SIPLACE X S the placement platform of choice for demanding high-volume production applications such as network infrastructure (5G), large boards for server and industrial segments. Wherever top speed, lowest dpm rates, non-stop setup changeovers, fast new product introductions and the high-speed placement of the latest generations of super-small components (0201 metric) are needed.

1. Placement head system

①SpeedStar CP20 placement head: Designed for high-speed placement, supports 0201 metric (0.2× 0.1mm) micro components, with a theoretical placement speed of 76,450 CPH. Equipped with dynamic pressure control function, it adapts to the non-destructive placement of sensitive components with an accuracy of 30 microns @4σ, meeting the stringent requirements of high-density PCBs (such as 5G network equipment and server motherboards).

② MultiStar placement head: supports three placement modes (collection placement, pick-up placement, and mixed mode), and flexibly handles 01005 to 200mm×110mm special-shaped components (such as heat sinks and connectors), covering the expansion requirements beyond standard components.

③ TwinHead placement head: designed for large special-shaped components, supports placement of devices with a height of up to 25mm and a weight of 160g (such as LED lenses and power modules), suitable for high-reliability scenarios such as automotive electronics.

2. Modular cantilever and transmission system

① Modular cantilever design: can be configured as single cantilever, dual cantilever or triple cantilever (such as SIPLACE X3 S). Users can increase or decrease the number of cantilever within 30 minutes, flexibly adjust production capacity without changing the production line layout.

② Supports intelligent transmission system. The single-track model processes 450×560mm PCB by default, and can reach 850×560mm after expansion (long board software serial number required), which is suitable for ultra-long substrates such as LED light boards.

③ Smart pin support: automatically adjusts the position of PCB support pins to reduce deformation and vibration of long and thin substrates during transmission and improve mounting stability.

3. Vision and inspection system

① Digital imaging system: high-resolution camera combined with multi-angle lighting technology supports barcode reading and component polarity detection to ensure traceability and consistency of the mounting process17. Blue light technology is used to enhance image contrast, and micro defects such as BGA solder balls and chip cracks can be identified to meet ISO Class 7 clean room standards.

② Laser sensor (LNC series): Real-time detection of component position, angle and height with an accuracy of ±0.05mm, supports on-the-fly identification, and reduces downtime.

4. Feeder and material management

① Smart X feeder: Compatible with 8mm to 56mm electric feeders, supports tube-mounted and tray-mounted components, and has a maximum feeder capacity of 160 stations to meet high-mix production needs.

② Smart Feeder technology: Automatic material receiving and material shortage warning, combined with buffer storage area design, to achieve continuous production.

5. Software and intelligent functions

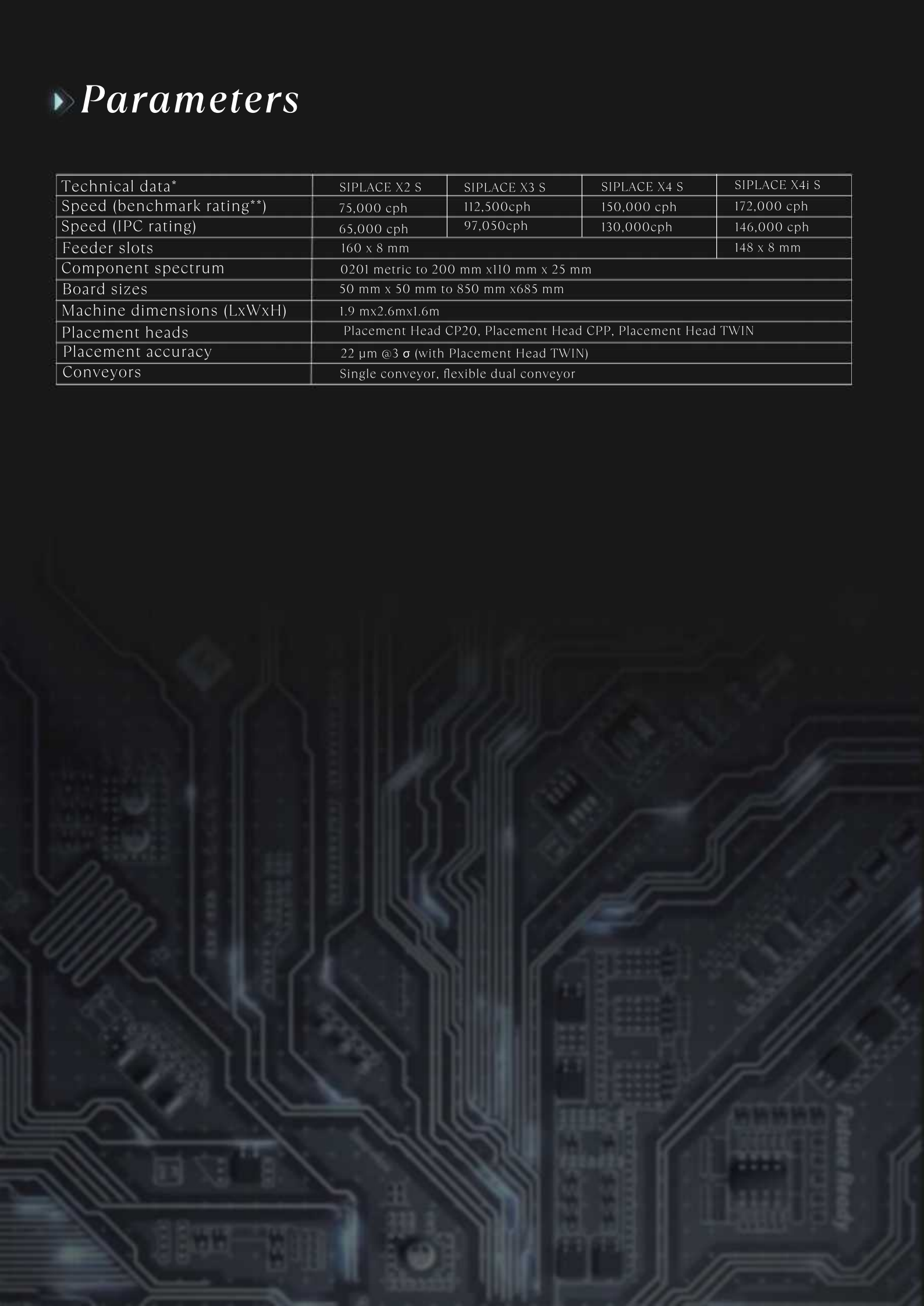
① Offline programming and path optimization: Support CAD data import and simulation debugging through SIPLACE Pro software, optimize component placement sequence, and shorten line change time to minutes.

② Data traceability and analysis: Integrate IPC-CFX and SECS/GEM protocols, seamlessly connect with MES/ERP systems, and achieve full-process data transparency (such as automotive electronics traceability requirements).

③ Predictive maintenance: Sensors monitor equipment status in real time, provide maintenance warnings, and reduce downtime risks.

Parameters

Technical data*	SIPLACE X2 S	SIPLACE X3 S	SIPLACE X4 S	SIPLACE X4i S
Speed (benchmark rating**)	75,000 cph	112,500cph	150,000 cph	172,000 cph
Speed (IPC rating)	65,000 cph	97,050cph	130,000cph	146,000 cph
Feeder slots	160 x 8 mm			148 x 8 mm
Component spectrum	0201 metric to 200 mm x110 mm x 25 mm			
Board sizes	50 mm x 50 mm to 850 mm x685 mm			
Machine dimensions (LxWxH)	1.9 mx2.6mx1.6m			
Placement heads	Placement Head CP20, Placement Head CPP, Placement Head TWIN			
Placement accuracy	22 µm @3 σ (with Placement Head TWIN)			
Conveyors	Single conveyor, flexible dual conveyor			



AIMEX III

FUJI AIMEX III | Flexible placement machine

Product information

The FUJI AIMEX III placement machine is designed for high-mix production and achieves efficient production with the collaboration of multiple components. Its core components have diverse functions and each system works closely together, greatly improving the flexibility, precision and efficiency of production.

1 Placement head system

① Multiple placement head configurations: equipped with H24S, DX, V12, H08M (Q), H02F, H01, OF and other placement heads to meet the placement needs of components of different sizes and types. For example, the H24S work head can place 03015 components with an accuracy of ±0.025mm, and the dual H24S heads can place components at a speed of up to 80,000cph in the capacity priority mode; the DX work head can dynamically replace the special tool according to the component style (chips, large-size components, irregular components, etc.), and the size covers 0402~102×102mm components. It can also be equipped with a dispensing tool to complete the dispensing and placement processes in the same module.

② Dynamic switching function: DynaHead (DX) supports dynamic switching of 12 nozzles, 4 nozzles and single nozzle tools during the production process, realizing borderless production and improving production efficiency and flexibility.

③ Special placement capabilities: Supports various special placements, such as press-in placement of large connectors and placement of clamping force controlled components, to meet various production needs.

2.Feeder system

①Large-capacity material station: With up to 130 material slots (converted to 8mm tape), it can carry a large number of different types of components, reduce the frequency of line change operations, and meet various production needs.

②Multi-type feeding support: Supports multiple supply units such as tape feeders, tube feeders, and tray units, and can mix and place components in different supply forms.

③Quick line change: Using Multi Feeder Unit (MFU) for overall line change can greatly reduce line change time. If using the optional offline power supply unit, all functions of the feeder on the MFU can be released at the press of a button, making external line change more efficient.

3.PCB handling system

① Wide range of PCB size support: When using a single conveyor, the supported PCB size is 48×48〜774×710mm; when using a double conveyor, the double-track conveyor supports 48×48〜774×330mm, and the single-track conveyor supports 48×48〜774×610mm. It can also support larger circuit boards through options, which can meet the production needs of small PCBs such as mobile phones and digital cameras, large PCBs for network technology and laptops, and ultra-long PCBs such as LED and LED TV panels.

② Dual-track parallel production: The machine with dual conveyor track configuration can produce two different products in parallel at the same time, improving production efficiency, and when one track is changing, the other track can continue production.

4.Detection system

① Component detection: Integrated IPS (Intelligent Part Sensor), which can detect component erection, component height confirmation, suction confirmation, and component return confirmation after suction. The LCR detection mechanism can detect the constants of passive components (coils, capacitors, resistors) before mounting and eliminate defective components.

② Coplanarity detection: It has a three-dimensional coplanarity detection function, which can check the solder ball defects of components such as BGA or CSP to prevent defective components from entering the production process.

③ Circuit board detection: Before mounting, the warping of the circuit board is automatically measured by a laser sensor, and only circuit boards that meet the tolerance range are mounted to eliminate defective circuit boards.

④ 5 Motion control system: The use of measures such as high-efficiency motors reduces the power consumption of the machine while ensuring the performance of the equipment. Although the document does not describe the specific parameters such as the accuracy of motion control in detail, from the overall function point of view, it can ensure that the mounting head accurately picks up and places components to meet different mounting accuracy requirements.

Parameters

Machine			AIMEX III	
Feeder slot quantity			130	
Panel size (LxW)	Single conveyor		48 x48 to 1,068 x710 mm *1	
	Double conveyor	Single conveyance	48x48 to 1,068 x 610 mm	
		Dual conveyance	48 x48 to 1,068 x330 mm	
Heads			H24S,DX,V12,H08M(Q),H02F,H01,OF	
Throughput			1 robot	2 robots
	H24S	Standard mode	35,000 cph (H24Sx1)	70,000 cph (H24S x2)
		Productivity priority mode	40,000cph(H24Sx1)	80,000 cph (H24Sx2)
	DX		27,000 cph (12 nozzles) 12,000 cph (4 nozzles) 5,800 cph (1 nozzle)	54,000 cph (12 nozzles) 24,000 cph (4 nozzles) 11,600 cph (1 nozzle)
	V12		26,000 cph (V12 x1)	52,000 cph (V12 x 2)
	H08M	Standard mode	13,000 cph (H08Mx1)	26,000 cph (H08M x2)
		Productivity priority mode	14,000 cph (H08M x 1)	28,000 cph (H08M x 2)
Placing accuracy	H24S		±0.025 mmCpk ≥ 1.00	
	V12		±0.038 mmCpk ≥ 1.00	
	H08M		±0.040 mm Cpk ≥ 1.00	
	H02F		±0.025 mm Cpk ≥ 1.00	
Part supply units			Tape feeders, stick feeders, tray units, others	
Power source			3-phase 200 to 230 V ±10 % (50/60 Hz)	
Air			0.5 MPa (ANR)	

NXT-3

FUJI NXT-3 | multi-functional modular placing machine

Product information

NXT-3 is a modular placement machine designed by FUJI for multi-variety and high-mix production scenarios. Its core advantages lie in flexible modular architecture, high-precision low-impact placement and intelligent production management. It supports the full range of processing from ultra-small chips to large special-shaped components, combined with advanced visual inspection and error-proofing technology, and is suitable for automotive electronics, mobile devices, semiconductor packaging and other fields with extremely high requirements for precision and efficiency. Through deep integration of software and hardware, it achieves fast changeover, efficient production and full-process quality traceability, and is one of the core equipment of intelligent factories.

1. Modular architecture and flexible configuration

① Dual module size: provides two modules, M3(S) (325mm wide) and M6(S) (650mm wide), which support free combination and adapt to the production needs from small high-density substrates to large special-shaped components.

② Quick reconstruction capability: supports one-click replacement of placement heads (7 optional, such as H12S/H08 high-speed head, F04 high-precision head, OF insertion head), and automatically triggers the calibration program after replacement, without manual adjustment, shortening the changeover time.
③ Expandable base: through the 2M/4M base combination, it supports up to 32 modules (in M3 (S)), meeting the capacity expansion from small batch to large-scale production.
④ Unit-level replacement: supports offline maintenance of components such as feeders, tray units, and placement heads. The maintenance process does not interrupt production, improving the overall equipment efficiency (OEE).
⑤ Single-side operation layout: Optimize ergonomic design, feed and change operations are concentrated on one side, support U-shaped or back-to-back production line layout, and reduce the operator's moving distance.

2. High-precision placement head
① H12S/H08 high-speed head: supports 0402 (01005) ~ 7.5×7.5mm chips, with a maximum placement speed of 16,500 CPH (M3S module), suitable for high-density small components.
② H01/F04 head: handles large special-shaped components (maximum 74×74mm/32×180mm), supports pressure insertion placement (39.2-98N pressure control), suitable for connectors, power modules, etc.
③ Low impact technology: standard low-impact nozzle (impact force ≤50gf), combined with Z-axis height adaptive control to avoid damage to thin components (such as 0.3mm thickness PCB) or flexible circuit boards.
④ Real-time posture detection: The position and angle deviation of the component after picking up are detected by the integrated camera (standard/side light), and the placement accuracy reaches ±0.030mm (lead components, Cpk≥1.0), supporting the precision placement of 0201 (008004) ultra-small components.
⑤ 3D coplanarity inspection: 3D scanning of the solder ball height of BGA, CSP and other packages, eliminating defective components with missing or deformed solder balls, and avoiding defects after placement.

3. Intelligent feeding and material management
① Diversified feeding unit
② Reel/tray mixed feeding:
③ Electric tape feeder: Compatible with 8-88mm tape (7/13/15 inch reel), M6 (S) module supports up to 45 components (8mm tape), supporting rapid replacement in production.
④ Tray Unit-L/M: Handles JEDEC standard trays, L type supports 335×330mm large trays (single tray 6 components), M type supports 135.9×322.6mm small trays (10 components/tray), suitable for semiconductor wafer-level packaging.
⑤ Intelligent refill system: Linked with Fujitrax software, real-time monitoring of component consumption, early warning of material shortage and automatic switching of backup feeders to achieve "non-stop material change".
⑥ Batch feeder trolley: supports rapid replacement of a whole set of feeders (such as one-time replacement of 45 slots of M6 (S) module), with automatic backup pin position adjustment, the changeover time is shortened by more than 50%.
⑦ Universal nozzle design: compatible with multiple-size components such as 0603/1005/1608/2125, reducing the frequency of nozzle replacement and improving production continuity.

4. Vision and quality control system
①Mark point fast identification: 0.25 seconds/Mark point reading speed, support substrate warpage compensation (laser sensor measures substrate deformation), ensure the consistency of mounting position.

② Intelligent Part Sensor (IPS): Detect component picking status (missing, tombstone, flipping), and residual inspection after mounting. Perform LCR electrical performance test on passive components such as inductors and capacitors to prevent components with normal appearance but poor performance from flowing into the production line.

③ Panel warpage compensation: Scan the substrate by laser before mounting, automatically adjust the mounting height, and ensure stable mounting on substrates with warpage ≤ set tolerance (such as ±0.5mm).

④ Lead coplanarity detection: Visually inspect the pin coplanarity of lead components such as QFP and SOIC, eliminate defective products with deformed pins, and reduce the risk of solder joints.

5. Motion Control and Mechanical Structure

① Linear motor drive: XY axis positioning accuracy ±0.050mm (3σ, Cpk≥1.0), with R axis (rotation axis) to achieve component angle fine adjustment (±0.01°), meet the placement requirements of 0.24mm fine pitch pin components.

② Dual track conveyor system: Single track mode supports a maximum of 534×610mm substrates, dual track mode simultaneously processes two 360×250mm substrates, conveyor width automatic adjustment (motor drive), reduce substrate transmission time.

③ Leading unit area efficiency: The floor area is only 1934mm wide, with modular stacking, to achieve the world's top area productivity of 67,200 CPH/㎡, suitable for high-density factory layout.

④ Clean room compatible: Optional HEPA filtration system, support Class 1000 clean environment, meet the high-precision requirements of semiconductor packaging, MEMS devices, etc.

⑤ VI. Intelligent software and production management

⑥ Fuji Flexa system: offline programming and path optimization, support CAD data import, automatically generate placement programs, and reduce programming time by more than 30%.

⑦ Real-time monitoring of equipment status and production data (such as placement speed and yield), providing OEE analysis and energy consumption management.

⑧ Fujitrax quality traceability: records the placement coordinates, pressure, time and other data of each component, supports PCB ID (2D code) reading, and realizes full process traceability from materials to finished products.

⑨ Error-proofing function: avoid wrong material installation through feeder ID matching and reduce the risk of human error.

⑩ One-click calibration: after replacing the placement head or nozzle, the calibration procedure is automatically executed (special jig nozzle is required) to ensure accuracy consistency without manual intervention.
Predictive maintenance: monitor nozzle wear and feeder failure through sensors, generate maintenance plans, and reduce sudden downtime.

NXT-H

FUJI NXT-H | High accuracy mounter

Product information

NXT-H is a high-end model designed by FUJI for semiconductor and high-density placement scenarios. Its core advantages lie in full compatibility with wafers/reel materials/trays, high-precision low-impact placement, and clean room adaptability. Its modular design combines advanced vision and pressure control technology, making it suitable for complex processes such as SiP modules, power semiconductors, and micro LEDs. It also achieves efficient production management and quality traceability through intelligent software.

1. High-precision placement head system

① Wafer/reel/tray full support: components can be picked up directly from wafers, reels and trays, supporting semiconductor chips (such as SiP, modules), small 0402 components to large 74×74mm (32×180mm) special-shaped components.

② Low-impact placement technology: through advanced pressure control technology (such as H01 head supports 2.2-9.8N placement pressure adjustment), the impact force on wafers and flexible circuit boards is reduced to avoid component damage or substrate deformation.

③ High-rigidity structure: The linear motor drives the XY axis, and the high-resolution visual system is used to achieve a placement accuracy of ±0.030mm (Cpk≥1.0) (for lead components), meeting semiconductor-level precision requirements.
④ High-speed processing capability: For small chips such as 0603, the placement speed can reach up to 16,500 CPH (M3S module, H12S head), supporting high-density placement scenarios.

2. Vision and positioning system
①Dual-mode visual inspection:
②Standard camera: supports the shape and polarity detection of components from 0402 (01005) to 74×74 mm, and corrects the component posture deviation in real time.
③Side light camera (optional): For pin components (such as QFP, BGA), multi-angle lighting is used to improve the pin coplanarity detection accuracy and avoid cold soldering.
④Mark point positioning: High-speed identification of substrate mark points (diameter ≥ 0.5mm), compensation for substrate warping or position deviation, and ensure consistency of placement position.
⑤Supports direct pickup of bare chips (Bump Parts) from wafers, with special suction nozzles (such as φ0.3-φ20.0mm) and vacuum adsorption control, to achieve stable pickup of thin components below 0.1mm in height.

3. Flexible feeding system
① Electric tape feeder: compatible with 8-88mm tape (7/13/15 inch reel), M6 (S) module supports up to 45 components (8mm tape).
② Tray Unit-L/M: handles JEDEC standard trays, L type supports 335×330mm large trays (single tray 6 components), M type supports 135.9×322.6mm small trays (10 components/tray).
③ Wafer processing unit (MWU12i compatible): through the integrated wafer loading table, supports 2-12 inch
④ wafers, realizes wafer map data (Wafer Map) management and format conversion (special software required).
⑤ Automatic material replenishment warning: linked with Fujitrax system, real-time monitoring of component consumption, early prompt to replace reels or trays, reducing downtime.
⑥ Batch replacement trolley: supports rapid replacement of electric feeders, and shortens the changeover time to minutes.

4. Motion and control technology
① Compact modular design: 2M/4M base configuration is provided, M6 (S) module width is 650mm, and dual-track conveyor can process two 360×250mm substrates at the same time, with industry-leading unit area production capacity.
② Clean room compatible: XY axis adopts dust-proof design, standard HEPA filter, supports clean room Class 1000 (ISO Class 6) environment, and meets the high cleanliness requirements of semiconductor production.
③ Multi-axis independent control: Z axis supports 0.1mm height resolution, Q axis (rotation axis) realizes component angle fine adjustment (±0.01°), adapting to high-precision placement requirements.
④ Dual-track conveyor system: Single-track mode supports substrates up to 534×610mm, dual-track mode improves small substrate production efficiency, and conveyor width is automatically adjusted (motor driven).

5. Software and operation interface
①Fuji Flexa system: offline programming, multi-machine data sharing, support CAD data import and placement path optimization, reduce programming complexity.

② Fujitrax quality traceability: record the placement data (position, pressure, time) of each component, support PCB ID (2D code) reading, and realize full process quality traceability.

③ 15-inch touch screen: graphical interface (GUI) intuitively displays equipment status, production parameters and fault prompts, and supports multi-language operation (including English).

④ One-button calibration: automatically trigger the calibration program after replacing the placement head or nozzle, without manual intervention, to ensure the consistency of placement accuracy.

6. Environment and safety configuration

①HEPA filtration system: optional high-efficiency air filter to maintain the cleanliness of Class 1000 in the machine to prevent dust from contaminating semiconductor components.

② Sealed design: reduce the entry of external pollutants and adapt to high-clean production environment (such as LED, MEMS device manufacturing).

③ Safety and maintenance double safety door detection: prevent contact with moving parts during operation, in line with CE and UL safety standards.

④ Intelligent maintenance reminder: Sensors monitor nozzle wear and feeder failure, automatically generate maintenance plans, and reduce the risk of downtime.

Parameters

Specifications				type FC	type SD	type LD
Heads				G04FQ	H24S / H24G	H08MQ
aa	Placement accuracy *1			±0.008 mm	±0.020 mm	±0.015 mm
	Die size *2			0.5x0.5 to 15x 15 mm	0.5x 0.5 to 5.0x 5.0 mm	0.5x 0.5 to 24 x 24 mm
	Die thickness			0.08 to 6.5 mm	0.08 to 3 mm	0.08 to 6.5 mm
	Minimum bump size			0.050 mm	--	--
	Bump pitch			0.100 mm	--	--
	Throughput *1	NXT-H	Face-up	4,500 cph	13,400 cph	8,700 cph
			Face-down	6,100 cph	--	--
				4,000 cph *3	--	--
	Wafer size			8,700 cph		
	Wafer magazine			25 or 13 slots		
aws	Placement accuracy *1			±0.008 mm	±0.020 mm	±0.015 mm
	Part sizes			0402 (01005") to 15 x 15 mm	0.2 x0.2 to 5.0 x 5.0 mm	0603 (0201") to 24 x 24 mm
	Throughput*1	NXT-H		5,200 cph	26,300 cph	11,500 cph
Panel sizes (Lx W)		NXT-H		48 x 48 to 610 x 380 mm		
		NXT-Hw		48 x 48 to 610 x 610 mm		
Power				3-phase AC200 to 230 V ±10% (50/60 Hz)		
Air				0.5 MPa (ANR)		
Air consumption				20 L/min (ANR)*4		
Weight	NXT-H+MWU12i			1,930 kg*5	1,910 kg	1,910 kg

NXT-R

FUJI NXT-R | High-end modular placement machine

Product information

NXT-R takes "zero defects, zero labor, and zero downtime" as its core, and realizes efficient production and high-quality placement of multiple varieties through modular design, intelligent feeding, high-precision placement head and full-process sensor detection. Its core advantages are:

Unmanned material management: The intelligent loading vehicle completely liberates the operator and reduces human errors;

Full-scenario adaptation: From small chips to large special-shaped components, it is compatible with flexible circuit boards and ceramic substrates;

Data-driven quality: LCR detection, 3D coplanarity scanning and other technologies intercept early defects, with a yield rate of more than 99.9%.

1. Core design concept: 3 "zero" goals

① Zero placement defects

② Equipped with intelligent part sensor (IPS) Full process detection:

③ Before picking: detect missing components, tombstones, flipping, positive and negative determination of pin components, height measurement (accuracy ±0.05mm).

④ Before placement: 3D coplanarity detection (such as BGA solder ball missing, QFP pin deformation, detection accuracy ±0.02mm), LCR electrical performance detection (resistance/capacitance/inductance of resistors/capacitors/inductors, to prevent the inflow of components with normal appearance but poor performance).

⑤ After placement: residual component detection to avoid double placement or missing placement.

⑥Laser substrate warpage compensation: scan substrate warpage before placement (accuracy ±0.1mm), dynamically adjust the Z-axis height to ensure stable placement on substrates with warpage ≤±0.5mm, and prevent placement deviation caused by substrate deformation.

⑦ Zero Machine Operators

Smart Loader:

Fully automatic material management: Automatically replenish materials and change lines according to production plans, support unmanned replacement of multiple types of feeders such as tapes, trays, wafers, etc., and eliminate line stoppages caused by manual feeding errors and delays.

Pre-stored materials in the cache station: Pre-store the feeders required for the next work order in the line-side cache station in advance, automatically switch when changing models, and shorten the line change time to less than 5 minutes.

Zero Machine Stops

Modular offline maintenance:

The placement head, feeding unit, and tray system support quick replacement (no tools required), and the maintenance process does not interrupt production, with an overall equipment efficiency (OEE) of ≥95%.

Self-diagnosis system: Real-time monitoring of parameters such as nozzle wear, feeder failure, and motor temperature, early warning and generation of maintenance work orders to prevent sudden downtime.

2. Core component functions

Reconfigurable modular architecture

Dual module design:

M3 (S) module (325mm wide): High-speed processing of 0201 (008004) ~ 7.5×7.5mm small chips, mounting speed up to 16,500 CPH (H12L head), suitable for high-density mobile phone boards, module component mounting.

M6 (S) module (650mm wide): Supports large special-shaped components (maximum 74×74mm/32×180mm), equipped with DX multi-function head, supports pressure insertion mounting (39.2-98N pressure adjustment), adapts to connectors, power modules, etc.

Flexible expansion: Through the 2M/4M base combination, up to 32 modules can be connected (M3 (S) equivalent), the substrate size covers 50×50~774×710mm (single track), and the dual track supports 370×280mm substrate parallel production.

Intelligent feeding system

Fully automatic feeder replacement:

Compatible with 8-88mm tape (7/13/15-inch reel), M6 (S) module supports up to 130 components (8mm tape), and supports continuous refilling during production (no need to stop).

Feeder ID management: Automatically match production procedures to prevent wrong material installation, and provide 3 minutes advance warning when there is a shortage of materials (through Fujitrax system).

Tray/wafer handling:

Tray Unit-L: Handles 335×330mm large trays (6 components per tray), supports direct loading of JEDEC standard wafer boxes, and vacuum adsorption handling arm positioning accuracy of ±0.1mm.

Tray Unit-M: Adapts to 135.9×322.6mm small trays (10 components/tray), and supports fully automatic picking of 2-12 inch wafers.

High-precision placement head technology

Multiple types of placement heads:

H12L high-speed head (12 nozzles): Focus on small chips, standard low-impact nozzles (impact force ≤ 50gf), real-time load control technology, suitable for 0.3mm ultra-thin flexible circuit boards, placement accuracy ±25μm (3σ, Cpk≥1.0).

DX multi-function head: Automatic switching of nozzles/fixtures (supports 0603~74×74mm components), integrated pressure sensor, adaptive adjustment of placement pressure to avoid component cracking or pad damage.

Flying visual correction: The placement head completes component posture detection (angle deviation ≤ 0.1°) during movement, and compensates the XYQ axis coordinates in real time to ensure the placement accuracy of fine-pitch components (0.24mm pin pitch).

Intelligent software and control system

Fuji Flexa programming system:

Offline programming: Supports direct import of CAD data, automatic generation of placement paths, shortens programming time by 40%, and supports multi-machine program synchronization and version management.

Real-time monitoring: Dynamic display of equipment status, OEE analysis (utilization rate, performance rate, yield rate), real-time warning of abnormalities such as substrate warping/nozzle wear (response time ≤ 1 minute).

Fujitrax traceability system:

Full process data recording: 30+ parameters such as placement coordinates, pressure, time, feeder ID, etc. of each component, support PCB ID (2D code) association, and realize two-way traceability from materials t o finished products.

Intelligent scheduling: Optimize the placement sequence according to component type and feeding position, reduce the empty movement distance, and improve production efficiency by more than 15%.

Parameters

Module			1R module	2R module
Panel size (LxW)	Single conveyor		48 x 48 to 750x 610 mm	48 x 48 to 370 x 610 mm
	Double conveyor	Single conveyance	48 x48 to 750x 510 mm	48 x 48 to 370 x 510 mm
		Dual conveyance	48x48 to 750x280 mm	48 x48 to 370x280 mm
Weight			755 kg	865 kg
Base			One module base	Two module base
Air consumption			60 L/min (ANR)	132 L/min (ANR)
Machine size (Lx Wx H)			795x1,740x1,480 mm	1,590x1,740x1,480mm
Weight			540 kg	1,080 kg
Head			RH20	RH08	RH02
Throughput (Under optimum Fuji conditions)			50,000cph	30,000 cph	9,000 cph
Placing accuracy*1			±0.025 mmCpk≥1.00		
Power			3-phase AC 200 to 230 V ±10V (50/60 Hz)		
Air			0.4MPa		
Part supply unit			Cassette-type feeder, Fuji Intelligent Feeder, Tray unit-RM		

DECAN-F2

DECAN-F2 | Flexible Placer

Product information

Introducing the DECAN-F2, Hanwha's Flexible Placer.It has 2 Gantries and 10 Spindles to achieve speed of 80000 CPH.The accuracy of the machine is about ±40μm [Cpk≥1.0 (0402 (01005 inch) chip)] or ±30μm[Cpk≥1.0 (IC, Stage Vision)].And its dimension is 1,430*1,740*1,995(L*D*H,Unit: mm).

Conveyor System

Function: 1. Supports multi-size PCB board transmission, and the maximum compatible size is estimated to be 510×460mm (reference DECAN S2 design).

2. Adopts magnetic suspension track technology to reduce transmission friction and improve stability; the "production offset problem" mentioned in user feedback may be related to the calibration of this system or the PCB clamping accuracy1.

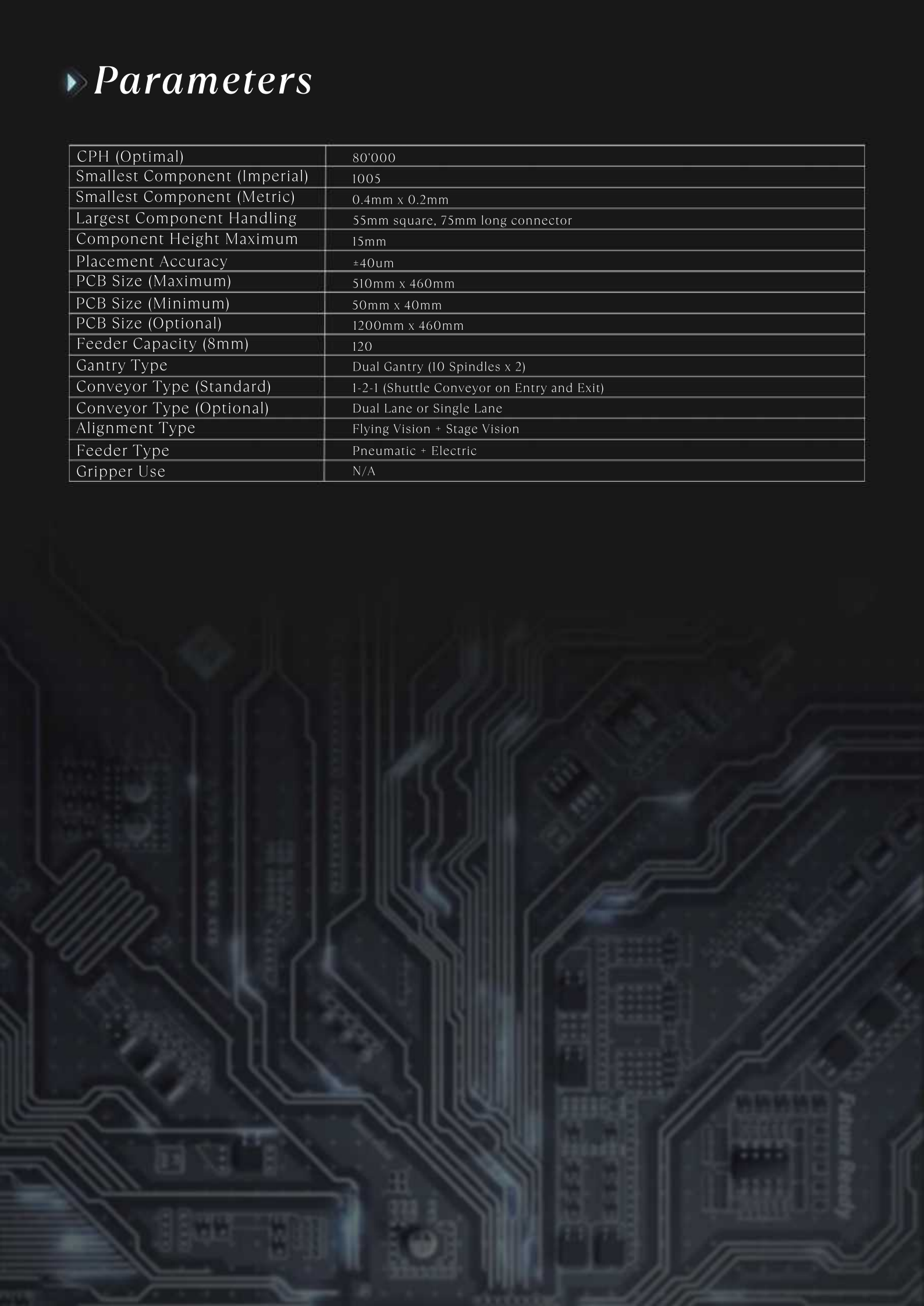
Vision System

Function: 1. Standard Flying Vision technology, component recognition is completed during the movement of the placement head, reducing the pause time.

2. High-resolution camera: supports ±25μm placement accuracy, but the "patch offset" mentio-ned in user feedback may require optimization of visual parameters or Mark point calibration.
Optional 3D laser detection module is used to detect component coplanarity (such as BGA, QFN packaging) and reduce welding defects.
Placement Head
Function: 1. Multi-nozzle design: supports picking up multiple components at the same time, and the placement speed is about 80000 CPH (lower than 92k CPH of DECAN S2, which may be optimized for medium-speed and high-precision scenarios).
2. Dynamic pressure control: automatically adjust the placement pressure according to the component type to avoid damage to precision components (such as LED lamp beads or thin ICs)1.
Feeder System
Function: 1. Electric feeder (eFeeder): supports 8mm to 56mm tape feeders. The "serious material throwing" mentioned in user feedback may be related to feeder calibration or tape tension control.
2. Smart Feeder technology: supports automatic material connection and material shortage warning, but regular maintenance is required to reduce the risk of material jamming.
DECAN-F2-info-1
Motion Control System
Function: 1. Linear motor drive: X/Y axis uses high-precision linear motor, with positioning accuracy of ±28 μm (refer to DECAN series design).
2. Vibration suppression algorithm: optimizes mechanical jitter under high-speed motion, but the "placement deviation" in user feedback may require checking servo parameters or mechanical wear1.
Software and operating system
Function: 1. Real-time optimization algorithm: automatically assign component placement paths, but users mentioned that "program optimization errors" may require adjusting component grouping or feeder station layout1.
2. Fault diagnosis system: built-in error code library (such as "C719 Z axis error"), supports rapid positioning of hardware or program problems.
Technical features and user feedback summary
Placement accuracy ±40μm (0402 (01005 inch) chip), ±30μm (IC, Stage Vision) Production deviation problems require checking visual calibration or placement head Z axis height1.
Feeder compatibility Supports electric/pneumatic feeders, 120 station capacity High throw rate may be related to feeder cleanliness or abnormal electric feeder drive1.
Expandability Optional 3D detection module, dual-track conveyor system No mention of expansion function, it is speculated that the modular design is easy to upgrade.
Maintenance cost The electric feeder is lubrication-free, but the nozzle needs to be replaced and the vacuum line needs to be cleaned regularly. Users reported that "the nozzle cleaning frequency is high", and it is recommended to optimize the sealing of the vacuum system.

Parameters

CPH (Optimal)	80'000
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.4mm x 0.2mm
Largest Component Handling	55mm square, 75mm long connector
Component Height Maximum	15mm
Placement Accuracy	±40um
PCB Size (Maximum)	510mm x 460mm
PCB Size (Minimum)	50mm x 40mm
PCB Size (Optional)	1200mm x 460mm
Feeder Capacity (8mm)	120
Gantry Type	Dual Gantry (10 Spindles x 2)
Conveyor Type (Standard)	1-2-1 (Shuttle Conveyor on Entry and Exit)
Conveyor Type (Optional)	Dual Lane or Single Lane
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric
Gripper Use	N/A



DECAN L2

Hanwha DECAN L2 Multi-Functional Place and Pick machine

Product information

Introducing the DECAN-L2, Hanwha's Multi-Functional Place and Pick machine.It has 2 Gantries and 6 Spindles to achieve speed of 56,000 CPH.The accuracy of the machine is about ±40μm [Cpk≥1.0 (0402 (01005 inch) chip)] or ±30μm [Cpk≥1.0 (IC, Stage Vision)].And its dimension is 1,430*1,740*1,995(L*D*H, Unit: mm).

Vision system

Function: 1. Cognex In-Sight vision system and DataMan barcode reader are used for component positio ning, polarity detection and QR code reading, supporting 0.6mm tolerance detection 12.

2. Optional 3D laser detection module detects component height and coplanarity to prevent c- old solder joints.

Safety monitoring system

Function: 1. Integrated VariKont L2 ultrasonic sensor array for obstacle monitoring around the equipment, triggering emergency deceleration or stop to avoid collision (similar to aerial platform application logic) 3. 2. Support synchronization function to reduce sensor signal crosstalk.

Feeder system

Function: 1. Electric feeder (eFeeder): supports 8mm to 56mm belt feeders, compatible with tube/tray components, and has Smart Feeder technology for automatic material collection.

2. Integrated Fault Bus communication, single-line transmission of overcurrent, overheating and other fault signals, reducing pin occupancy (refer to BridgeSwitch™ power device design)7.

Motion control system

Function: 1. Linear motor drive: X/Y axis resolution reaches micron level, and mounting accuracy is estimated to be ±25μm (refer to DECAN S2 performance).

2. Vibration suppression technology: Optimize acceleration curve, theoretical mounting speed may reach more than 80,000 CPH.

Power supply and communication module

Function: 1. Adopt contactless power supply design (such as EDCD series module), realize multi-channel load protection through CAN bus, and improve reliability7.

2. Support Ethernet communication, integrate with MES/ERP system, and upload production data in real time.

Parameters

CPH (Optimal)	56'000
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.4mm x 0.2mm
Largest Component Handling	55mm square, 75mm long connector
Component Height Maximum	25mm
Placement Accuracy	±40um
PCB Size (Maximum)	510mm x 460mm
PCB Size (Minimum)	50mm x 40mm
PCB Size (Optional)	1200mm x 460mm
Feeder Capacity (8mm)	120
Gantry Type	Dual Gantry (6 Spindles x 2)
Conveyor Type (Standard)	3 Stage (Single)
Conveyor Type (Optional)	Dual Lane
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric
Gripper Use	N/A

DECAN-S1

DECAN-S1 | Fast & Flexible Mounter

Product information

Introducing the DECAN-S1, Hanwha's Fast & Flexible Mounter.It have 1 Gantry and 10 Spindles to achieve speed of 47000 CPH.The accuracy of the machine is about ±28 μm [Cpk≥ 1.0 (Chip)] or ±30 μm [Cpk≥ 1.0 (IC)].And its dimension is 1,430*1,740*1,485(L*D*H,unit:mm).

Conveyor System

Function: 1. Support standard PCB size 50×50mm ~ 510×460mm, compatible with flexible board and rigid board transmission.

2. Basic dual-track design, driven by servo motor to ensure transmission stability, but not equipped with advanced technologies such as magnetic levitation (presumably cost-optimized design).

Vision System

Function: 1. Basic PCB positioning camera: coordinate correction through Mark point, positioning accuracy ±28μm and (lower than DECAN S2's ±25μm).

2. Component centering camera: supports the recognition of 0402 (0.4×0.2mm) and above components, and does not come standard with 3D laser detection module (optional).

Placement Head

Function: 1. Single cantilever structure: equipped with 6 independent spindles, the placement speed is estimated to be 47,000 CPH (lower than S2's 92k CPH), suitable for medium-speed production scenarios.

2. Dynamic pressure control: supports mounting pressure adjustment, suitable for conventional components (such as resistors, capacitors) and small ICs (such as QFP packages).

Feeder System

Function: 1. Electric feeder (eFeeder): supports 8mm to 44mm tape feeders, compatible with tube-mounted components, with a capacity of 80 stations (lower than the 120 stations of S2).

2. Basic material shortage warning: The remaining amount of the tape is prompted by the LED indicator, but the automatic material receiving function is not integrated.

Motion Control System

Function: 1. Servo motor drive: The X/Y axis adopts traditional lead screw drive, with a positioning accuracy of ±30μm (lower than the ±25μm of the linear motor).

2. Basic vibration suppression: The acceleration curve is optimized through the software algorithm, but the mounting speed may need to be reduced to maintain stability when running at high speed.

Software and operating system

Function: 1. Basic path optimization: supports manual component grouping and mounting order adjustment, but lacks real-time dynamic optimization algorithm.

2. Fault diagnosis interface: built-in common error codes (such as nozzle blockage, feeder jam), no integrated remote monitoring function.

Parameters

CPH (Optimal)	47'000
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.3mm x 0.15mm
Largest Component Handling	55mm square, 75mm long connector
Component Height Maximum	15mm
Placement Accuracy	±28um
PCB Size (Maximum)	510mm x 510mm
PCB Size (Minimum)	50mm x 50mm
PCB Size (Optional)	1500mm x 510mm
Feeder Capacity (8mm)	120
Gantry Type	Single (10 Spindles)
Conveyor Type (Standard)	3 Stage (Single)
Conveyor Type (Optional)	N/A
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric
Gripper Use	N/A

DECAN-S2

Hanwha DECAN-S2 High-speed pick and place machine

Product information

Introducing the DECAN-S2, Hanwha's High-speed Pick and place machine.It has 2 Gantries and 10 Spindles to achieve speed of 92000 CPH.The accuracy of the machine is about ±28 μm [Cpk ≥ 1.0 (03 015 Chip)] or ±25 μm [Cpk ≥ 1.0(IC)].And its dimension is 1,430*1,740*1,995(L*D*H,Unit: mm).

Conveying system

1. Supports multi-size PCBs (50×50mm to 510×460mm, optional expansion to 1200×460mm)2.
2. Magnetic suspension track technology ensures high-stability transmission.

DECAN-S2-info-2 DECAN-S2-info-3 DECAN-S2-info-4

Vision system

1. PCB positioning camera: Correct coordinates through Mark points,Fly Camera and Fix Camera.
2. Component centering camera: Identify component position and polarity, with accuracy supporting 03015 chips (0.3×0.15mm).
3. 3D laser detection (optional): Detect component height and coplanarity to prevent cold soldering.

DECAN-S2-info-5

Placement head

1. Dual cantilever structure: 10 independent spindles, support synchronous picking.
2. Dynamic pressure control: Adapt to different component thicknesses (up to 15mm), and the placement pressure is adjustable.
3. Automatic nozzle replacement: compatible with 7 standard nozzles + 9 optional nozzles.

Feeder system

1. Electric feeder (eFeeder): supports 8mm to 56mm tape feeders and tube/tray components.
2. Smart Feeder: automatic material receiving, 120 material station capacity.

DECAN-S2-info-6 DECAN-S2-info-7

Motion control system

1. Linear motor drive: X/Y axis resolution 2μm, placement accuracy ±25μm (IC components)2.
2. Vibration suppression technology: ensure stability under high-speed placement (up to 92,000 CPH).

DECAN-S2-info-1

Software and operating system

1. Real-time optimization of placement path, integrated SMEMA/SECS/GEM protocol, support MES/ERP system.
2. Automatic calibration and temperature compensation function.

Parameters

CPH (Optimal)	92'000
Feeder Capacity (8mm)	120
Largest Component Handling	55mm square, 75mm long connector
PCB Size (Maximum)	510mm x 460mm
PCB Size (Minimum)	50mm x 50mm
PCB Size (Optional)	1200mm x 460mm
Placement Accuracy	±28um
Smallest Component (Imperial)	
Smallest Component (Metric)	0.3mm x 0.15mm
Component Height Maximum	15mm
Gripper Use	N/A
Gantry Type	Dual Gantry (10 Spindles x2)
Conveyor Type (Optional)	Dual Lane or Single Lane
Conveyor Type (Standard)	1-2-1 (Shuttle Conveyor on Entry and Exit)
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric

HM520

Product information

Introducing the HM520, Hanwha's Cutting-edge Modular Mounter.It have 2 Gantries and 20 Spindles to achieve speed of 80000 CPH.The accuracy of the machine is about ±25 μm [Cpk ≥ 1.0 (Chip)].And its dimension is 890* 2,370*1,930(L*D*H,Unit: mm).

High-speed placement performance

Placement speed: up to 80,000 CPH (under ideal conditions), high-speed placement is achieved through the collaborative operation of dual cantilevers (2 Gantry) and 20 spindles (20 Spindle).

Placement accuracy: Standard components: ±25μm (Cpk≥1.0) IC components: ±30μm (Cpk≥1.0)19.

Applicable component range: supports 0201 (0.25×0.125mm) to 55×55mm (maximum height 15mm), covering microchips, LEDs, QFP/BGA packages, etc.159.

Vision system: 1. Flying Vision: Component recognition is completed while the placement head is moving, reducing pause time and improving efficiency19.

2. HD camera: 5M pixel camera, supports accurate recognition of micro components such as 0402 and 060317.

Side View Camera: 1. Real-time inspection of nozzle status and component posture to prevent missed or wrong placement79.

2. 3D laser detection (optional): Detect component height and coplanarity to avoid cold soldering or tombstone13.

Feeder system: 1. Electric feeder (eFeeder): Supports 8mm to 56mm belt feeders, compatible with tube-mounted and tray-mounted components, with a capacity of 120 stations15.

2. Smart Feeder technology: automatic material receiving and material shortage warning, reducing manual intervention and improving production continuity17.

Motion control system: 1. Dual cantilever structure: linear motor drive, X/Y axis resolution reaches micron level, combined with vibration suppression algorithm to ensure high-speed placement stability19.

2. Dynamic pressure control: automatically adjust the placement pressure according to the component type to prevent damage to precision components39.

Software and intelligent functions: 1. Real-time path optimization: automatically allocate component placement sequence, reduce cantilever idle travel time, and improve efficiency15.

2. Family Job Change: When similar machines change lines, they share feeders and nozzles, shortening the line change time by 40%79.

3. Error information sharing: By sharing error marks (Badmarks) between SMT production line equipment, the overall production cycle is shortened

Parameters

	High Speed Machine	LED Machine	Multi Function Machine
	20 Spindle x 2 Gantry(Rotary Type)		6 Spindle x 2 Gantry(Piano Type)
	80,000 CPH (Optimum)		60,000 CPH (Optimum)
chip	Chip ±25 μm @ Cpk ≥ 1.0		±40 μm @ Cpk ≥ 1.0
IC	–		±30 μm @ Cpk ≥ 1.0
size	0201 ~ □ 6 mm		0402 ~ □ 55 mm
Max.height	2 mm		15 mm
single	2 mm		
dual	Standard: L510 x W310, Option: L750 x W310		
	80 ea (Docking Cart)	8 ea (Fixed Base)	80 ea (Docking Cart)
	0.3 ~ 4.2		
Power	3 Phase, AC 200V / 208V / 220V / 240V / 380V / 415V ±10%		
	Max. 4.2 kVA		
Air Consumption	100 Nℓ/min		
	Approx. 1,605		
	L890 x D2,312 x H1,921		

SM471 PLUS

SM471plus Fast Chip Shooter

Product information

Introducing the DECAN-S2, Hanwha's Fast Chip Shooter.It has 2 Gantries and 10 Spindles to achieve speed of 78000 CPH.The accuracy of the machine is about ±40 μm [±3σ (Chip))] or ±50 μm [±3σ (QFP)]. And its dimension is 1,650*1,690*2,045(L*D*H,Unit: mm).

High-speed placement performance

1. Placement speed: Theoretical maximum speed 78,000 CPH (dual cantilever structure, 20 spindles working together), the actual speed is affected by component type and program optimization.

2. Placement accuracy: Standard components: ±40μm (±3σ) 25IC components: ±50μm (±3σ)

3. Applicable component range: supports 0402 (01005 inch) to □14mm IC (height ≤12mm), covering micro resistors, capacitors and special-shaped devices.

2. Modular design

1. Dual cantilever structure (2 Gantry): Each cantilever is equipped with 10 independent spindles (10 Spindles/Head), supporting synchronous picking and placement, optimizing production efficiency.

2. Flying Vision: The placement head completes component recognition while moving, reducing downtime and improving overall production capacity.
3. Feeder system
1. Highly compatible feeders: Supports 120 8mm electric feeders (eFeeder), compatible with SM series pneumatic feeders, and realizes seamless connection between new and old equipment367.
2. Smart Feeder technology: The world's first automatic material receiving and feeding function, reducing manual intervention and improving production continuity.

4. Motion control system
1. Dual servo Y-axis drive: Optimizes track transmission stability and combines vibration suppression algorithm to reduce mechanical jitter during high-speed movement.
2. Mounting accuracy compensation system: Supports dynamic calibration of suction position, head position and track position to adapt to different production environments.

5. Vision and inspection system
High-resolution camera: Supports PCB Mark point recognition and component alignment, and enhances the mounting capability of special-shaped components (such as BGA, connectors).
Optional 3D laser detection: Detect component height and coplanarity to prevent cold soldering defects (optional module required).

6. PCB processing capabilities
Substrate size: Single track mode: minimum 50×40mm, maximum 610×460mm (expandable option)
Dual track mode: minimum 50×40mm, maximum 460×250mm
Thickness range: 0.38mm~4.2mm

Parameters

CPH (Optimal)	78'000
Feeder Capacity (8mm)	120
Largest Component Handling	14mm x 14mm
PCB Size (Maximum)	510mm x 460mm
PCB Size (Minimum)	50mm x 50mm
PCB Size (Optional)	610mm x 460mm
Placement Accuracy	±40um
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.4mm x 0.2mm
Component Height Maximum	12mm
Gripper Use	N/A
Gantry Type	Dual Gantry (10 Spindles x2)
Conveyor Type (Optional)	Dual Gantry
Conveyor Type (Standard)	1-2-1 (Shuttle Conveyor on Entry and Exit)
Alignment Type	Flying Vision
Feeder Type	Pneumatic + Electric

SM481 PLUS

SM481plus | Flexible Placer

Product information

Introducing the SM481plus, Hanwha's Flexible Placer.It has 1 Gantry and 10 Spindles to achieve speed of 40000 CPH.The accuracy of the machine is about ±40 μm [±3σ (Chip)] or ±30 μm [±3σ(QFP)].And its dimension is 1,650*1,680*2,090(L*D*H,Unit: mm).

High-speed placement performance: 1. Placement speed: Theoretical maximum speed 40,000 CPH, achieved through the collaborative operation of a single cantilever structure (1 Gantry) and 10 independent spindles (10 Spindles/Head), optimizing the suction and placement actions and improving efficiency.

2. Placement accuracy: Standard components (Chip): ±40μm (±3σ)

3. QFP package: ±30μm (±3σ).

Visual system optimization: 1. Flying Vision: Complete component recognition while the placement head is moving, reducing downtime and improving efficiency.

2. High-resolution camera: Supports accurate recognition of 0402 (01005 inch) to □42mm ICs, suitable for precision components such as QFP, BGA and other packages.

3. Fixed camera (FOV45): Standard for PCB Mark point positioning to ensure the accuracy of substrate transmission and placement coordinates.

Feeder system: 1. Electric feeder (eFeeder): supports 120 8mm belt feeders, compatible with SM series pneumatic feeders, and realizes seamless connection between new and old equipment.

2. Automatic alignment function of suction position: optimizes the component picking position and reduces the throwing rate.

3. SMART Feeder technology: supports automatic material receiving and feeding, reduces manual intervention, and improves production continuity.

PCB processing capacity: 1. Standard substrate size: 460×400mm, optional expansion to 1,500×460mm (suitable for long LED or display PCB).

2. Thickness range: 0.38mm~4.2mm, supports flexible boards and rigid boards.

Motion and vacuum system: 1. Dual servo Y-axis drive: optimizes the stability of track transmission and reduces vibration during high-speed movement.

2. Vacuum pump optimization: realizes suction stability and minimizes air pressure consumption, reducing energy consumption.

Intelligent software and operation interface: 1. Mounting accuracy correction system: Dynamically calibrate the suction position, head position and track position to adapt to environmental changes.

2. Windows 7 operating system: Equipped with dual 15-inch VGA color screens, supporting real-time monitoring and program adjustment.

3. Automatic conveyor width control: Adapt to the rapid switching of PCBs of different sizes.

Parameters

CPH (Optimal)	40'000
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.4mm x 0.2mm
Largest Component Handling	55mm square, 75mm long connector
Component Height Maximum	15mm
Placement Accuracy	±40um
PCB Size (Maximum)	460 x 400mm
PCB Size (Minimum)	50mm x 50mm
PCB Size (Optional)	1500mm x 460mm
Feeder Capacity (8mm)	120
Gantry Type	Single (10 Spindles)
Conveyor Type (Standard)	3 Stage (Single)
Conveyor Type (Optional)	N/A
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric
Gripper Use	N/A

SM482 PLUS

SM482 | Multi-Functional Pick and Place Machine

Product information

Introducing the SM482plus, Hanwha's

Multi-Functional Placer.It has 1 Gantry and 6 Spindles to achieve speed of 30000 CPH.The accuracy of the machine is about ±40 μm [±3σ (Chip)] or ±30 μm [±3σ(QFP)].And its dimension is 1,650*1,680* 2,090(L*D*H,Unit: mm).

High-speed placement performance: 1. Placement speed: Theoretical maximum speed 30,000 CPH (single cantilever structure, 6-axis coordinated operation), the actual speed is affected by component type and program optimization.

2. Placement accuracy: standard components (Chip): ±40μm (±3σ), QFP package: ±30μm (±3σ).

3. Applicable component range: supports 0603 (0.6×0.3mm) to 55×55mm (maximum height 15mm), covering micro resistors, capacitors, ICs and special-shaped connectors (such as 75mm long connectors).

Vision and inspection system: 1. Flying Vision: Complete component identification while the placement head is moving, reducing downtime and improving efficiency.

2. Polygon identification solution: Enhance the placement capability of special-shaped components

(such as BGA, QFN), and support high-precision positioning of 55mm ICs.

3. Fixed camera (FOV45): used for PCB Mark point positioning to ensure the accuracy of substrate transmission and mounting coordinates.

Feeder system: 1. Electric feeder (eFeeder): supports 120 8mm belt feeders, compatible with SM series pneumatic feeders, and realizes seamless connection between new and old equipment.

2. Automatic alignment function of suction position: optimizes component pickup position and reduces material throwing rate.

3. Smart Feeder technology: supports automatic material connection and material shortage warning to improve production continuity.

PCB processing capacity: 1. Standard substrate size: single-track mode 50×40mm~460×400mm, dual-track mode maximum 460×250mm.

2. Expansion options: can support 740×460mm (production of LED and long display PCB)145.

3. PCB thickness range: 0.38mm~4.2mm, compatible with flexible and rigid boards.

Motion and vacuum system: 1. Dual servo Y-axis drive: optimizes track transmission stability and reduces vibration during high-speed movement.

2. Vacuum system optimization: achieves suction stability through vacuum pump, minimizes air pressure consumption (180NL/min), and reduces energy consumption.

Intelligent software and maintenance: 1. Mounting accuracy correction system: dynamically calibrates suction position, head position and track position to adapt to environmental changes.

2. Modular design: automatic nozzle replacement function, supports 20 nozzle configurations (including standard and optional types), and is easy to maintain.

Parameters

CPH (Optimal)	40'000
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.4mm x 0.2mm
Largest Component Handling	55mm square, 75mm long connector
Component Height Maximum	15mm
Placement Accuracy	±40um
PCB Size (Maximum)	460 x 400mm
PCB Size (Minimum)	50mm x 50mm
PCB Size (Optional)	1300mm x 460mm
Feeder Capacity (8mm)	120
Gantry Type	Single (6 Spindles)
Conveyor Type (Standard)	3 Stage (Single)
Conveyor Type (Optional)	N/A
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric
Gripper Use	N/A

SM485

SM485 | Wide Ranged Component Pick and Place Machine

Product information

Introducing the HM520, Hanwha's Wide Ranged Component Placer.It has 1 Gantry and 4+1 Spindles to achieve speed of 22000 CPH.The accuracy of the machine is about ±40 μm [±3σ (Chip))] or ±30 μm [±3σ (QFP)].And its dimension is 1,650*1,680*1,530(L*D*H,Unit: mm).

High-speed placement performance: Placement speed: 1. Theoretical maximum speed 22,000 CPH (dual cantilever structure, 8 spindles working together), the actual production speed will be reduced due to the influence of component type and program optimization.

Placement accuracy:

2. Standard components: ±40μm (Cpk≥1.0)

IC components: ±30μm (Cpk≥1.0)

3. Applicable component range: supports 0402 (0.4×0.2mm) to 30×30mm component placement, maximum height 12mm.

2. Modular design: 1. Scalable feeder system: supports 60 8mm tape feeder stations, compatible with tube-mounted and tray-mounted components, suitable for medium and low-density PCB production.

2. Multi-nozzle configuration: 4 nozzle types (1.0mm to 4.0mm) are standard, supporting automatic switching to meet the placement needs of components of different sizes.

3. Vision system: 1. Basic visual positioning: 2D camera is used to complete PCB Mark point recognition and component alignment. The recognition accuracy meets the requirements of conventional components, but the 3D laser detection module is not standard (optional).

2. Flying Vision: Component recognition is completed while the placement head is moving, reducing downtime and improving efficiency.

4. Motion control system: 1. Servo motor drive: The X/Y axis uses traditional screw drive, and the positioning stability is slightly lower than that of the linear motor, but the maintenance cost is lower.

2. Vibration suppression technology: The acceleration curve is optimized through software algorithms to reduce mechanical jitter in high-speed motion, which is suitable for small and medium-sized PCB production.

5. Intelligent software: 1. Basic path optimization: Manually adjust the component placement order, lack of real-time dynamic optimization function, and long line change time (about 30 minutes).

2 Fault diagnosis system: built-in common error codes (such as nozzle blockage, feeder jamming), support rapid positioning of problems

Parameters

CPH (Optimal)	22'000
Smallest Component (Imperial)	1005
Smallest Component (Metric)	0.4mm x 0.2mm
Largest Component Handling	150mm Long Connector
Component Height Maximum	26mm
Placement Accuracy	±40um@±3sigma (Chip) / ±30um@±3sigma (QFP)
PCB Size (Maximum)	460 x 400mm
PCB Size (Minimum)	50mm x 50mm
PCB Size (Optional)	740mm x 460mm
Feeder Capacity (8mm)	120
Gantry Type	Single (4 Spindles + 1 Force Control Spindle)
Conveyor Type (Standard)	3 Stage (Single)
Conveyor Type (Optional)	N/A
Alignment Type	Flying Vision + Stage Vision
Feeder Type	Pneumatic + Electric
Gripper Use	YES

FX-3RA

JUKI FX-3RA | High Speed Modular Mounter

Product information

JUKI FX-3RA SMT machine** is a high-speed and high-precision SMT equipment that uses 24 nozzles for synchronous placement and new laser recognition technology. It supports 0402 to 33.5mm components (including QFP/BGA), with a theoretical speed of 90,000 CPH and an accuracy of ±0.05mm. It is equipped with a linear servo motor and magnetic suspension drive to ensure stability and efficiency; it is compatible with mixed feeders and extra-long substrates (maximum 800×560mm), and is suitable for diversified production needs such as LEDs and automotive electronics. The modular design and low maintenance characteristics significantly improve the flexibility and reliability of the production line.

1. Mounting head and laser recognition system Structural design:

4 mounting heads (each with 6 nozzles), totaling 24 nozzles, support synchronous picking and mounting, and achieve high-speed operation.

Laser sensor (LNC60): The new laser sensor supports 6 nozzles to suck and automatically identify at the same time, and the recognition speed is 20% higher than the traditional 4 nozzles. It can cover 0402 (0.4×0.2mm) to 33.5mm square components,including complex packages such as QFP, CSP, BGA, etc., with a recognition accuracy of ±0.05mm (±3σ).

On-the-fly recognition: The mounting head completes component recognition during high-speed movement, reducing downtime and improving mounting efficiency.

2. Vision and motion control system

XY axis linear servo motor: The new linear servo motor drives the X/Y axis, combined with full closed-loop control and 0.001mm resolution linear magnetic scale to achieve high speed (acceleration improvement) and high-precision positioning.

Magnetic suspension linear motor technology: friction-free and wear-free design, long-term maintenance-free, long equipment life, and acceleration far exceeding traditional screw drive.

Dual servo Y-axis drive: optimizes track stability, reduces vibration during high-speed movement, and ensures placement accuracy.

3. Feeder system

Mixed feeder specifications: supports the use of electric belt feeders and mechanical belt feeders on the same machine, and can load up to 240 components (calculated based on 8mm belt feeders).

Smart Feeder technology: The electric feeder supports automatic material connection and material shortage warning, reduces manual intervention, and improves production continuity.

4. PCB processing capabilities

Substrate size compatibility:Standard substrates: L substrates (410×360mm), XL substrates (610×560 mm).

Extension options: supports long-size substrates (800×560mm), suitable for ultra-long PCB production such as LED lighting.

Substrate support system: Motor-driven support table to reduce vibration when releasing the substrate, prevent placement offset, and shorten substrate fixing time.

5. Software and operation interface

Real-time optimization algorithm: automatically allocate component placement paths, optimize production procedures, and achieve a theoretical speed of 90,000 CPH (optimal conditions).

15-inch touch screen:

Provides an intuitive operation interface, supports real-time monitoring of placement status, ejection rate and fault diagnosis.

Compatibility: Can be combined with JUKI KE series placement machines to form a production line, flexibly responding to diverse production needs.

6. Vacuum system and maintenance design

High vacuum pump: Reduce air consumption, improve component suction stability, and reduce ejection rate7.

Modular maintenance: Key components such as nozzles and feeders support quick replacement, and the electric feeder is lubrication-free and has low maintenance costs.

Summary of technical advantages

High speed and high precision: Linear servo motors combined with laser recognition technology achieve 90,000 CPH high-speed placement and ±0.05mm accuracy.

Strong scalability: Supports ultra-long substrates and mixed feeders, adapting to diverse scenarios such as LEDs and automotive electronics.

Low maintenance cost: Magnetic levitation drive and modular design reduce downtime and extend equipment life.

Parameters

Item/Model		High-Speed Modular Mounter		FX-3RA(include FX-3RAL and FX-3RAXL)
		FX-3RAL	FX-3RAXL	Feathre
Board size	L size(410x360mm)	yes	no	1. 0402mm(01005 inch) ~ 33.5mm×33.5mm 2. Laser recognition : ±0.05mm(±3σ) 3. On-the-fly centering using integrated laser 4. 2 stations, 4 gantries, 4 placement heads, 24 nozzles 5. Linear servo motor XY drive with full closed-loop control 6. Holds up to 240 components 7. Electrical or mechanical feeder trolley
	L-Wide size(510x360mm)*1	yes	no	
	XL size(610×560mm)	no	yes	
Component height	Applicability to long PWB*1	800×360mm	800×560mm	
	6mm	yes		
Component size	Laser recognition	0402(01005) ~ 33.5mm×33.5mm		
Placement speed (chip)	Optimum	0.040Sec. / chip(90,000CPH)*2		
	IPC9850	66,000CPH*2		
Placement accuracy	Laser recognition	±0.05mm(±3σ)		
Feeder inputs		Max.240 in case of 8mm tape		
		(on a Electric double tape feeder)		

JX-350

JUKI JX-350 | Flexible LED Mounter

Product information

The new JX-350 LED Mounter offers a flexible placement system specially designed for LED lighting products and mid- to large LCD display backlights.

It can support ultra-long boards up to 1,500mm and JUKI laser centering for high speed, high accuracy placement offers the best in the industry.

1. Laser recognition system

LNC60 laser sensor: Through high-resolution laser irradiation of components to form shadows, it can identify the position, angle and size of components in real time, and supports 0603 (British 0201) to 33.5mm square components (including complex packages such as QFP and BGA). The placement accuracy is ±0.05mm (Cpk≥1), and unified recognition is completed during high-speed movement, reducing downtime and improving effici

2. Mounting head and nozzle design

6-nozzle laser mounting head: A single mounting head is equipped with 6 independent nozzles, supporting synchronous picking and mounting, with a theoretical speed of 32,000 CPH (under optimal conditions).

Screw nozzle design: It can handle large components with a maximum diameter of 25mm (such as LED lenses and diffusers) to achieve high-speed interactive suction. The nozzle material is optimized to meet the needs of micro components (such as 0603) and high-density mounting.

3. PCB handling system

Compatibility of long substrates: supports 1,500mm×360mm ultra-long substrates (transferred in three times), suitable for long-size production requirements such as LED light boards and LCD backlights.

Standard substrate sizes range from 650mm×360mm (single transfer) to 1,500mm×360mm (expanded option), compatible with flexible and rigid boards.

The substrate support table is motor-driven to reduce mounting deviation caused by vibration.

4. Feeder system

Mixed feeder configuration:

Supports mixed use of mechanical and electric feeders, with a standard configuration of up to 40 components (8mm tape type), and optional electric feeders can be expanded to 160.

Electric feeder (eFeeder): Compatible with other JUKI series (such as RX/FX/KE) to improve production line stability.

Smart Feeder technology: automatic material receiving and material shortage warning to reduce manual intervention.

5. Motion control and drive system

Dual servo Y-axis drive: optimizes track transmission stability, reduces vibration during high-speed motion, and ensures placement accuracy.

Linear motor technology: Some models use magnetic suspension drive to reduce friction loss and long-term maintenance-free.

6. Intelligent functions and software

Component inspection function: Real-time monitoring of component absorption status through the screen before placement to prevent missing or wrong placement of small components. Automatically check component return status and stand-up problems after placement to reduce defective rate.

Modular programming: supports integration with JUKI production system "JaNets" to optimize production line management.

7. Maintenance and reliability

Modular design: key components such as nozzles and feeders support quick replacement to reduce maintenance time.

Electric feeder is lubricated-free: reduce the frequency of daily maintenance and extend the life of the equipment.

CPK precision correction: regularly calibrate the placement offset through the glass fixture substrate to ensure process stability.

Parameters

Board size	Placement speed (chip)	650mm×360mm
	2time clamping	1,200mm×360mm
	3time clamping*	1,500mm×360mm
Component height		6mm / 12mm
Component size		0603(0201) ~ □33.5mm
Placement speed (chip)	Optimum	32,000CPH
	IPC9850	21,000CPH
Placement accuracy		±0.05mm（Cpk≧1）
Feeder inputs	Front-side fixed mechanical feeder bank(Standard)	Max.40 in case of 8mm tape
	Front+rear-side fixed mechanical feeder bank (option)	Max.80
	Front+rear-side fixed electrical feeder bank (option)	Max.160 When using 8mm tape(on a Electric double tape feeder)

KE-3010A

JUKI KE-3010A | High-Speed Modular placement SMT Chip Shooter

Product information

The KE3010A is a 7th generation modular placement machine from Juki and represents the latest leading-edge technology for improved flexibility and production quality.

1. Laser recognition system (LNC60)

Function: Equipped with LNC60 laser sensor, it supports on-the-fly centering recognition, and can detect component position, angle and size while the placement head is moving, covering 0402 (01005 in British system) to 33.5mm square components, including complex packages such as QFP, CSP, BGA, etc.

Placement accuracy: The accuracy in laser recognition mode reaches ±0.05mm (Cpk≥1), and the recognition speed is 20% higher than that of the previous generation model.

Real-time monitoring: Tracking and detection from component suction to placement ensures placement stability and reduces the risk of missing or wrong placement.

2. Placement head and nozzle design

Structure: A single placement head is equipped with 6 independent nozzles, supporting synchronous picking and placement, with a theoretical speed of 23,500 CPH (chip components) and 18,500 CPH and 9,000

CPH (IC components, MNVC image recognition module is required).

Dynamic pressure control: Automatically adjust the placement pressure according to the component type to adapt to components of different heights (6mm or 12mm) and sizes.

3. Feeder system

Electric dual-track feeder (EF08HD): Supports 8mm tape feeders and can load up to 160 components (calculated based on 8mm tape feeders), which doubles the capacity of traditional models and significantly reduces line change time.

Hybrid compatibility: Both electric (ETF) and mechanical (CTF/ATF) feeders can be used to reduce upgrade costs.

Automatic material connection and material shortage warning: Continuous production is achieved through Smart Feeder technology, reducing manual intervention.

4. Motion control system

XY axis drive technology: Adopts new screw drive + high-precision linear magnetic scale (resolution 0.001mm), combined with full closed-loop control, to achieve high speed (acceleration optimization) and high-pre-cision positioning, while reducing noise.

Dual servo Y-axis drive: Optimize track stability and reduce vibration during high-speed movement.

5. PCB processing system

Substrate compatibility: supports a variety of substrate sizes, including standard sizes (such as M-type 330×250mm, XL-type 610×560mm) and extended long-size substrates (maximum 1,210×560mm), suitable for the production of ultra-long PCBs such as LED light boards and displays.

Motor-driven support table: reduces vibration during substrate transmission, shortens fixing time, and improves mounting accuracy.

6. Software and intelligent functions

Operating system: Based on Windows XP (supports switching between Chinese, Japanese, and English), the interface is intuitive and easy to operate.

Offline programming software (JANETS): supports CAD import, path optimization and simulation, can generate programs offline and simulate debugging to improve production efficiency.

Real-time monitoring and diagnosis: built-in fault code library, real-time display of throw rate and mounting status, and support for integration with MES/ERP systems.

Parameters

Board size	M size (330×250mm)	Yes
	L size (410×360mm)	Yes
	L-Wide size (510×360mm) (optional)	Yes
	XL size (610×560mm)	Yes
	Applicability to long PWB (M size) (Applicability to long PWB is optional.)	650×250mm
	Applicability to long PWB (L size) (Applicability to long PWB is optional.)	800×360mm
	Applicability to long PWB (L-Wide size) (Applicability to long PWB is optional.)	1,010×360mm
	Applicability to long PWB (XL size) (Applicability to long PWB is optional.)	1,210×560mm
Component height	6mm	12mm
	12mm	12mm
Component size	Laser recognition	0402(01005) ~ 33.5mm
	Vision recognition	3mm[When using MNVC. (option)] ~ 33.5mm
		1.0×0.5mm[KE-3010A： When using both high-resolution camera and MNVC. (option) ~ 20mm
Placement speed	Optimum	23,500CPH
	IPC9850	18,500CPH
	IC [Effective tact : The IC placement speed indicates an estimated value obtained when the machine places 36 QFP (100 pins or more) or BGA components (256 balls or more) on a M size board. (CPH=number of components placed for one hour)]	9,000CPH (Estimated value when using MNVC and picking up components simultaneous with all nozzles.MNVC is option in the KE-3010A.)
Placement accuracy	Laser recognition	±0.05 mm (±3σ)
	Vision recognition	±0.04mm
Feeder inputs		Max.160 in case of 8mm tape (on a Electric double tape feeder)(When using Electric double tape feeder EF08HD.)

KE-3020VA

JUKI KE-3020VA | High Speed Flexible Mounter

Product information

The KE302V is a 7th generation modular placement machine from Juki and represents the latest leading-edge technology for improved flexibility and production quality. It supports a hybrid feeder mix of electronic and mechanical feeders with up to 160 dual lane electronic 8mm tape feeder capacity per machine. Maximum board size is 22"x24". The KE3020V is the ideal solution for PoP (package on package) placement supporting a linear and rotary fluxer for highly accurate placement

1. Placement head system

Laser placement head (6 nozzles): equipped with LNC60 laser sensor, supports on-the-fly centering recognition, can complete the detection of component position, angle and size on the move, covering 0402 (01005 British) to 33.5mm square components, with a placement accuracy of ±0.05mm (Cpk≥1).

Dynamic pressure control: automatically adjusts the placement pressure according to the component type, adapting to components of different heights (up to 25mm) and sizes. High-resolution visual placement head (1 nozzle). Supports image recognition (MNVC module), can handle 3mm to 74mm square components or 50×150mm special-shaped components, with an accuracy of ±0.03mm.

2. Vision and detection system

Laser recognition: monitors component status in real time through shadow analysis, reduces the risk of missing or wrong placement, and supports complex packages such as QFP and BGA.

Image recognition (MNVC module): Standard high-resolution camera, supports continuous image recognition, and increases IC component placement speed to 9,470 CPH (when using MNVC).

Optional 3D detection module (optional) detects component height and coplanarity to prevent cold soldering.

3. Feeder system

Electric dual-track feeder (EF08HD): supports 8mm to 56mm tape feeders, and can load up to 160 components (based on 8mm tape), which is double the capacity of traditional models.

Smart Feeder technology: automatic material connection and material shortage warning, reducing manual intervention and improving production continuity.

Hybrid compatibility: Both electric and mechanical feeders can be used to reduce upgrade costs.

4. PCB processing system

Substrate compatibility: supports standard substrates (such as L-type 410×360mm, XL-type 610×560mm) and extended long substrates (maximum 1,210×560mm), suitable for LED light boards, displays and other ultra-long PCB production.

Motor-driven support table: Reduce vibration during substrate transmission, shorten fixing time, and improve placement accuracy.

5. Motion control system

Linear motor drive: X/Y axis uses high-precision linear magnetic scale (resolution 0.001mm), combined with full closed-loop control to achieve high speed (acceleration optimization) and high-precision positioning.

Dual servo Y-axis drive: Optimize track stability and reduce vibration during high-speed movement.

6. Software and intelligent functions

Offline programming (JANETS): Supports CAD import, path optimization and simulation, can generate programs offline and simulate debugging to improve efficiency.

Real-time monitoring and diagnosis: Built-in fault code library, real-time display of throwing rate and placement status, support integration with MES/ERP system.

Modular design: Compatible with other JUKI models (such as FX-3R), flexible configuration of production lines.

Parameters

BOARD SIZE	COMPONENT SPECS	FEEDER INPUTS	PLACEMENT SPECS
Maximum board size is 22" x 24"	Component Height: 01005 up to 33.5mm square	Max.160 in case of 8mm tape(on a Electric double tape feeder) The use of electronic double tape feeders enables mounting of a maximum of 160 component types.	Placement Speed 17,100CPH (IPC9850) for chips and a new and improved speed of up to 9,470CPH (IPC9850) whenusing the tri-colored camera for ball and lead inspection.
	Component Size: 74 X 74 or 50 X 150mm (multi-imaging)		Placement Accuracy: · Laser Recognition: ±0.05mm (±3σ) · Vision Recognition: ±0.03mm(MNVC ±0.04mm)

LX-8

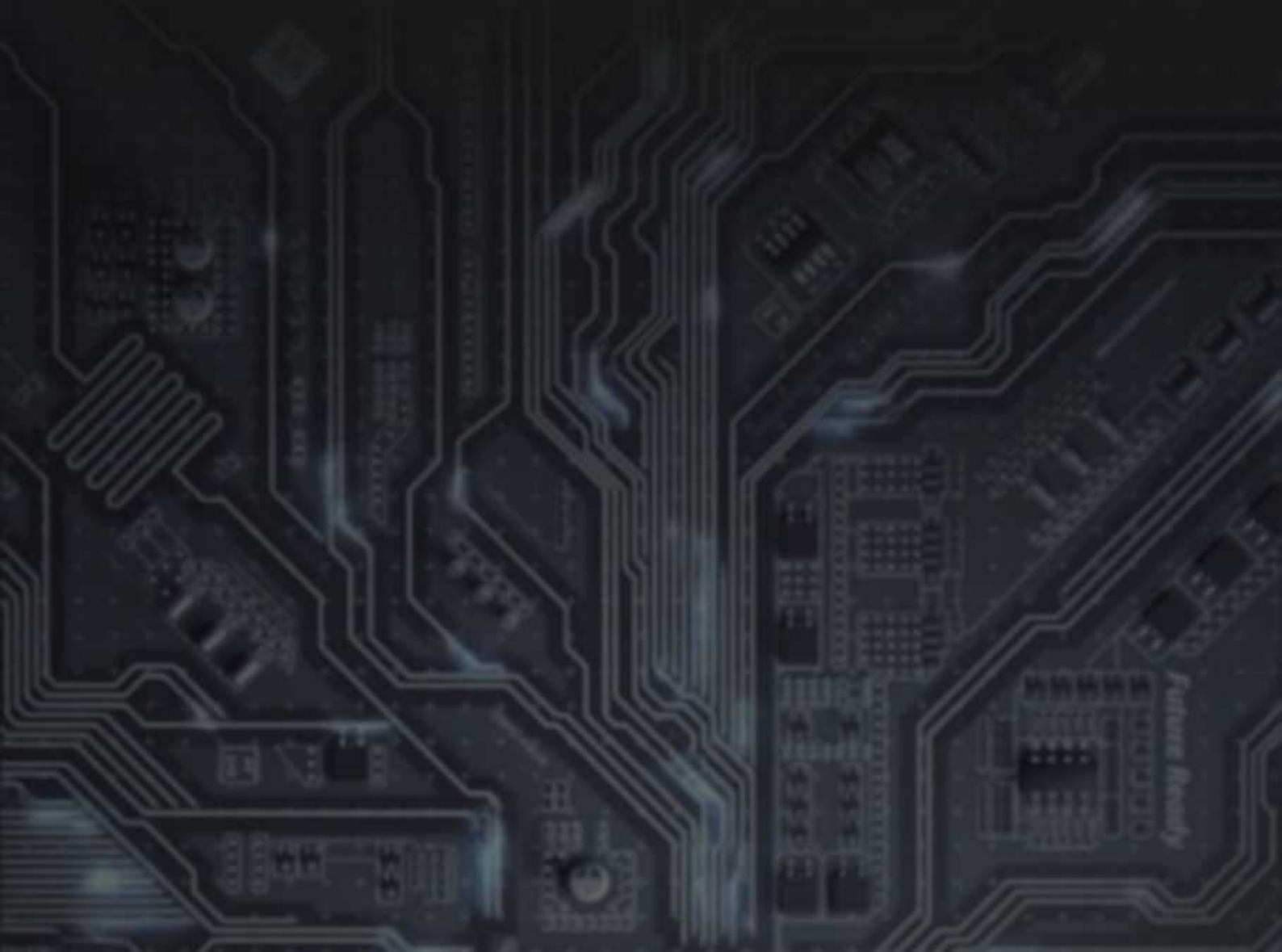
JUKI LX-8 | High-speed Flexible Mounter

Product information

JUKI's LX-8 is the ultimate solution for any production line. With its cutting-edge technology and versatility, it features double Takumi heads for exceptional performance and precision. Despite reaching top speeds of up to 94,000 CPH, the LX-8 ensures an exceptional accuracy rate of ±30 µm (Cpk ≥1), delivering precision and quality with every placement.

Parameters

Advanced Flexible Mounter	LX-8
Board Size Single clamping Double clamping	 50x50～410mm x 400mm 50x50～810mm x 400mm
Model configuration Component height	Takumi + Takumi 25 mm
Component size Maximum Minimum	 3015 65mm/10mm x 90mm/50mm x 75mm
Placement speed (optimum) Placement accuracy	94,000CPH ±30um (Cpk ≧1)
Feeder capacity Tape Tray	 Max. 160 Max. 60
Power Apparent power Operating air pressure Air consumption (standard) Machine dimensions (WxDxH)	3-phase AC200V, 220V - 430V 2.49 kVA 0.5±0.05MPa 50L/min ANR 1,600 mm x 1,800 mm x 1,440 mm
Mass (approximately)	2,500kg



RS-1R

JUKI RS-1R | Smart Fast Modular Mounter

Product information

The consistent further development of the tried-and-tested technologies from the RS-1R opens up new, outstanding possibilities:

Even faster assembly of smallest chips (0201 metric) up to large components of 50 x 150 mm or 74 mm edge length for square components. The base frame of the RS-1R has been completely redesigned for this purpose.

The unique Takumi head covers even more different component heights and thus achieves a decisive speed advantage. The 360° visual component recognition allows the secure detection of user-specific p-olarity marks.

Thanks to the RFID integration in the nozzles, these can be traced back completely together with the components and boards.

The machine combines the features of a chip shooter with a mounter for large components. The pur-chase of each special machine type for it eliminates as well as a change of the placement head.

1. Mounting head and laser recognition system

Mounting head design: 1HEAD mounting head is used, with a theoretical mounting speed of 47,000 CPH (under ideal conditions), and high-speed mounting is achieved by shortening the moving time from adsorption to mounting.Mounting head variable height recognition sensor: The recognition height is refined from 5 segments to 6 segments (1mm, 6mm, 12mm, 20mm, 25mm, 3mm), optimizing the adaptability of mounting height and improving the actual mounting efficiency.

Dynamic pressure control: Automatically adjust the mounting pressure according to the component type to avoid component damage or nozzle wear and extend the service life.

Laser recognition: Applicable to 0402 (British 01005) to 33.5mm square components, real-time tracking of component height and position, with an accuracy of ±35μm (Cpk≥1), reducing mounting errors caused by nozzle dirt or wear.

Image recognition (VCS camera): supports 54mm, 27mm, and 10mm field of view, and is used for pin bending and solder ball shedding detection of special-shaped components (such as QFP, BGA), with an accuracy of ±30μm. The stability of component recognition can also be enhanced through 3-color lighting technology.

2. Feeder system

RF Feeder (electric feeder): supports 8mm to 56mm tape feeders, compatible with tube and tray components, with a maximum feeder capacity of 112 stations, improving component supply efficiency.

Smart Feeder technology: automatic material connection and material shortage warning, reducing manual intervention and supporting continuous production.

3. PCB processing system

Substrate compatibility: standard substrate size: 50×50mm~650×370mm (single clamping), after expansion, supports 950×370mm (double clamping) or optional track extension to 1,200×370mm, suitable for long-sized PCBs such as LED light boards.

Motor-driven support table: Reduce substrate transmission vibration, shorten fixing time, and improve placement accuracy.

4. Motion control system

Linear motor drive: X/Y axis adopts high-precision linear motor and magnetic suspension technology, combined with 0.001mm resolution linear magnetic scale, to achieve micron-level positioning stability under high-speed motion.

Dual servo Y-axis drive: Optimize track transmission stability, reduce mechanical vibration, and improve placement consistency.

5. Intelligent functions and software

RFID nozzle management: The nozzle is equipped with RFID tags, and the nozzle maintenance time traceability and quality monitoring are realized through the host reader, which improves the intelligent level of placement quality management.

Offline programming (JANETS): Supports CAD data import, path optimization and simulation debugging, shortens line change time, and improves production line flexibility.

HMS height measurement system (optional): Accurately measure component height deviation, optimize nozzle contact depth, prevent poor absorption or overturning components, and improve absorption rate.

6. Scalability and maintenance design

Modular maintenance: Key components such as nozzles and feeders support quick replacement, and the electric feeder is lubrication-free design to reduce maintenance costs.

Production line compatibility: Can be combined with other JUKI models (such as RX-7R) to achieve a flexible combination of high speed and general functions to meet the production needs of multiple varieties.

Parameters

Item	RS-1R
Conveyor specification	standard 150mm conveyor extensions, upstream and downstream 250mm conveyor extensions, upstream and downstream
Board size	Minimum: 50 × 50 ㎜ maximum 1 buffer: 650 × 370 ㎜ (Single clamping) 950 × 370 ㎜ (double clamping) 1,100 × 370 ㎜ (double clamping) 1,200 × 370 ㎜ (double clamping) 3 buffers: 360 × 370 ㎜ 500 × 370 ㎜ 600 × 370 ㎜
Component height Component size	25 mm 0201*1~□74 mm /150 x50 mm
Placement speed	Optimum: 47.000CPH IPC9850:31.000CPH
Placement accuracy Feeder inputs Power supply Apparent power Operating air pressure Air consumption	+35μm(Cpk≧1) max112 AC200~415V*3.3-phases 2.2 k VA 0.5+0.05MPa 200 lmin for interal vacuum generator, 50 lmin with optior vacuum pump
Machine dimensions (W×D×H)	1.500x1,810x1.440 mm 1.800x1,810x1.440 mm 2.000x1.810x1.440 mm
Mass (approximately)	1.700kg

RS-1XL

JUKI RS-1XL | Fast Smart Modular Mounter

Product information

With maximum speed up to 42,000CPH (Optimum) and 29,000CPH (IPC9850), the RS-1XL is designed for maximum throughput. The RS-1XL supports components from 0201 metric (008004") up to 74mm square and 50mm x 150mm rectangular parts for maximum flexibility.

1. Mounting head and laser recognition system

8-nozzle mounting head: RS-1XL uses a parallel 8-nozzle mounting head, supports synchronous picking and mounting, can handle 50mm×150mm large components (such as heat sinks, connectors), and can complete mixed mounting from tiny components to large devices without changing the mounting head.

Newly developed upper and lower integrated drive function: optimizes the vertical motion control of the nozzle to improve mounting stability and efficiency.

Dynamic pressure control: automatically adjusts the mounting pressure according to the size and weight of the component to avoid component breakage or PCB damage.

Laser recognition technology: standard LNC series laser sensor, supports real-time height and position recognition of 0402 (0.4×0.2mm) to 50mm×150mm components, with an accuracy of ±0.05mm (Cpk≥1), suitable for complex packages such as QFP and BGA.

2. Feeder system

RF electric feeder: compatible with 8mm to 56mm tape feeders, supports tube and tray components, and the feeder capacity reaches 120 stations (calculated based on 8mm tape).

Smart Feeder technology: automatic material receiving and material shortage warning functions, reducing manual intervention and improving continuous production efficiency.

RS-1XL - product - info -1

3. PCB processing capabilities

Ultra-large substrate support: The standard substrate size is 650mm×560mm, suitable for large-size PCB production such as LED light boards and industrial control boards.

Extended transmission track: through combined transmission extension, it supports ultra-long substrates (such as 1,200mm×370mm) to meet diversified production needs.

Substrate fixing technology: using a motor-driven support table to reduce vibration during substrate transmission, improve placement accuracy, and shorten substrate fixing time.

4. Motion control system Linear motor and servo drive

Y-axis linear motor: achieve high-speed motion (acceleration optimization) and high-precision positioning, and reduce mechanical vibration.

X-axis dual servo drive: synchronous control of left and right independent servo motors to ensure the stability of the placement head under long stroke (650mm).

5. Software and intelligent functions

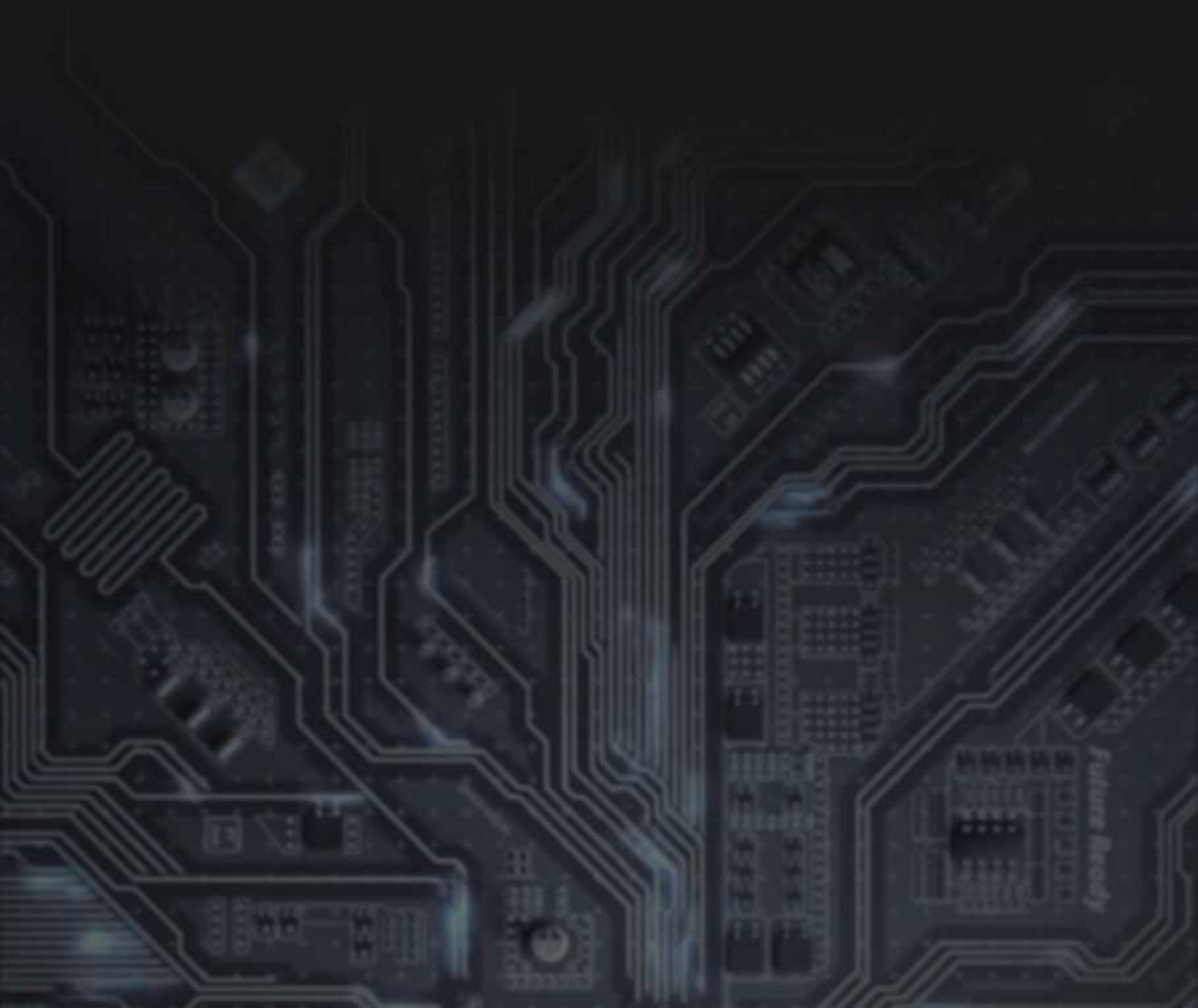
JaNets production management system: supports integration with other equipment on the production line (such as the RX series), realizes real-time monitoring of production data, program optimization and fault diagnosis, and improves overall workshop efficiency.

Offline programming and simulation: import CAD data through HLC software, optimize the placement path and simulate debugging to shorten the line change time.

Automatic calibration function: supports CPK precision correction, automatically measures the placement offset through the glass fixture substrate, and adjusts the process parameters to maintain long-term accuracy

Parameters

Fast Smart Modular Mounter		
Model		RS-1XL
Board size		50×50㎜~650×560㎜
Component height		25㎜
Component size		0201*1～□74㎜/150×50㎜
Placement speed	Optimum	42,000CPH
	IPC9850	29,000CPH
Placement accuracy		±35μm (Cpk≧1)
Feeder inputs		Max. 112*2
Power supply		AC200 ～ 415V*3 .3-phases
Apparent power		22 kVA
Operating air pressure		0.5±0.05 Mpa
Air consumption		200L / min
Machine dimensions (W×D×H)*4		2,109×2,000×1,440 ㎜
Body weight		1,850 kg



RX-6 / RX-B

JUKI RX-6 RX-B | High-Speed Compact Modular Mounter

Product information

The compact RX-6R/RX-6B offers high productivity, flexibility and quality - in a compact footprint.

This is applicable to dual-lane production.Compact footprint : the width is just 1.25m.Equipped with standard Placement Monitor check function.Replaceable head allow you to configure a production line best suited to the current repirments.High-speed component placement using high-speed non-stop vision recognition.Wide range of components and boards: tall components, large components and large boards.Brand new Matrix Tray Sever TR8S improves the component capability and productivity.

1. Mounting head system

Multi-nozzle design: Two mounting head configurations, 6 nozzles and 3 nozzles, are provided, which support quick replacement to meet different production needs (such as mixed mounting of chip components and large ICs). The front and rear mounting heads are designed to work interactively to reduce motion loss, and the theoretical mounting speed reaches 42,000 CPH (chip components) and 14,000 CPH (IC components) (based on IPC9850 standard).

Support dynamic pressure control (0.5N~50N) to meet the mounting needs of sensitive components (such as LEDs) and PoP (stacked packages).

Laser recognition system (LNC): Covers 0402 (British 01005) to 33.5mm square components, with an accuracy of ±0.04mm (Cpk≥1), and real-time monitoring of component position and height.

Image recognition (MNVC module): supports 3mm~100mm square components and 50×180mm special-shaped components (such as long connectors), with an accuracy of ±0.03mm (requires optional high-resolution camera).

2. Feeder system

High-compatibility feeder: standard electric dual-track belt feeder (RF Feeder), supports 8mm to 56mm belts, with a maximum capacity of 160 components (calculated based on 8mm belt), compatible with tube and tray components.

Smart Feeder technology: automatic material connection and material shortage warning functions, reducing manual intervention and improving production continuity.

RX-6 RX-B -product - info -1

3. PCB processing system

Substrate compatibility: Standard substrates: single track supports 50×50mm~610×590mm, dual track supports 50×50mm~360×250mm.

Extension options: through two times clamping, it supports up to 905×590mm long substrates, suitable for large-size PCB production such as LED light boards.

Motor-driven support table: Reduce transmission vibration, shorten substrate fixing time, and improve mounting stability.

4. Vision and inspection system

Flying vision (On-the-fly): Complete component recognition while the mounting head is moving, reduce downtime, and optimize mounting efficiency.

Suction/mounting monitor: Standard function, real-time capture of component suction and mounting moments, prevent defective products from flowing out, and support rapid fault diagnosis.

3D inspection (optional): Detect component coplanarity and height deviation to prevent cold soldering or tombstone defects.

5. Motion control system

Linear motor drive: X/Y axis uses high-precision linear motor and magnetic suspension technology, combined with 0.001mm resolution magnetic scale to ensure stability under high-speed movement.

Dual servo Y-axis drive: Optimize track transmission, reduce mechanical vibration, and improve mounting consistency.

6. Intelligent software and scalability JaNets production management system: Supports offline programming (CAD import), path optimization and simulation debugging, and shortens line change time.

Modular design: Expandable matrix tray server TR8S improves the processing capacity of special-shaped components.

Supports combination with other JUKI models (such as RX-7) to build a flexible production line.

Parameters

Component loading quantity	Max.160 in case of 8mm tape feeder (on a Electonic double tape			
	feeder))			
Component recognition Camera(VCS)	Standard	Option	Standard	Option
Placement monitor Inspection function	Standard	Option	Standard	Option
Auto tape cutter	Standard	Option	Standard	Option
Nozzle	Standard	Option	Standard	Option
Force control	Standard	Option	Standard	Option
Virus measurement Software(white list)	Standard	Standard	Standard	Standard

RX-8

JUKI RX-8 | High -Speed Compact Modular Mounter

Product information

JUKI RX-8 achieves ultra-high speed (100,000 CPH) and high precision (±40μm) micro-component placement through P20 placement head, high-precision vision system and intelligent feeding management, which is especially suitable for high-density placement scenarios such as consumer electronics and LED lighting. Its compact design and JaNets system support efficient production line integration and process optimization, and is a benchmark for SMT equipment that takes into account speed, precision and flexibility.

1. Placement head system (P20 high-precision placement head)

Placement speed: up to 100,000 CPH (under optimal conditions, for small chips such as 0201), supporting high-speed pick-up and placement of single reel tape.

Component adaptability: Designed for ultra-small chips (0201 and above) and small ICs, it can handle component sizes ranging from 0201 to □5mm and heights ≤3mm (such as high-density, high-precision placement scenarios such as LED edge lights).

Low-impact placement technology: supports independent adjustment of the nozzle's downward pressure/upward speed to reduce the impact on components and substrates (especially flexible circuit boards) during placement, ensuring stable placement of micro components.

Real-time visual correction: integrated with advanced centering and detection visual systems, automatically corrects component position deviations after picking, improves placement accuracy to ±40μm (Cpk≥1), and effectively avoids defects such as flipping.

In-flight detection: supports component presence detection and polarity recognition to ensure that the component status meets the requirements before placement.

2. Vision System

Coaxial lighting technology: The new XO coaxial lighting is used to provide clearer component images and improve the recognition accuracy and stability of micro components such as 0201.

Multi-function detection: Real-time detection of defects such as missing components and flipping, and automatic correction of the pick-up position to improve the success rate of component pick-up.

Mark point recognition: Supports high-precision positioning of substrate mark points, compensates for substrate deformation or position deviation, and ensures the consistency of mounting position.

Single track mode: Substrate size 50×50〜510×450mm (only 50-350mm length supports BOC, Bad Mark, 2D barcode reading).

Long board mode: Supports simultaneous processing of two substrates with a length of ≤420mm, improving the production efficiency of double boards.

3. Feeding system

High-density feeding: Two rolls of 8mm tape can be installed in a single traditional feeder space (17mm), and the feeder capacity is up to 56 types (when using RF08AS), supporting 8mm to 88mm tapes, and compatible with diversified feeding from small chips to large components.

Automatic pick-up position correction: Dynamically adjust the feeder position according to the component recognition results to ensure stable picking.

Batch replacement trolley: Supports the mixed use of electric feeders and mechanical feeders, and quickly replaces the feeding group through the trolley to reduce the changeover time.

Status visualization: The LED indicator shows the working status of the feeder in real time, and flashes to locate the problem feeder when a fault occurs.

Supports existing mechanical feeders and batch replacement trolleys to protect users' existing assets; supports multiple feeding methods such as tape and tray (optional accessories required).

4. Motion control system

Compact and efficient design: Adopting a lightweight gantry structure, the equipment width is only 998 mm, achieving the highest placement efficiency per unit area (industry-leading placement rate per square meter).

High-precision positioning: The XY axis repeat positioning accuracy meets the mounting accuracy of ± 40μm (Cpk≥1), and the Z axis supports component height adaptation to ensure vertical mounting.

Flexible substrate processing: Supports single-track large-size substrates (up to 510×450mm) or dual-track small substrates (processing two substrates ≤420×250mm at the same time), adapting to the production needs of multiple varieties.

Substrate stabilization technology: Through vacuum adsorption and mechanical clamping devices, the vibration of the substrate during the mounting process is reduced, and the stability during high-speed mounting is improved.

5. Software system

Full process management: Supports offline programming of production programs, multi-machine data sharing, real-time monitoring of equipment status (such as Factory Dashboard), compatible with CAD data conversion, and optimizes production line balance.

Trace Monitor function: Real-time tracking of the mounting head status, recording data such as picking errors and identifying anomalies, locating problem feeders or nozzles, and facilitating rapid troubleshooting and process improvement.

Bad mark propagation: Receive bad mark information from upstream equipment (such as AOI), skip defective substrate areas, and reduce repeated inspection time.

Intelligent scheduling: Automatically trigger the replenishment warning according to the component consumption, and link with the automated warehousing system to achieve uninterrupted production.

Low-impact placement parameter configuration: For flexible circuit boards or micro components, adjust the nozzle pressing speed and pressure separately to avoid substrate deformation or component damage.

Multi-language support: Provide English operation interface and manual, support remote monitoring and fault diagnosis (optional accessories required).

6.. Power supply and air source system

Input voltage: three-phase AC 200V/220V/430V (220V-430V requires a separate transformer), apparent power 2.1kVA, low power consumption design adapts to energy-saving production needs.

Air source requirements

Air pressure: 0.5±0.05MPa, standard air consumption 20L/min ANR (during normal operation), support stable component picking and placement.

Parameters

High -Speed Compact Modular Mounter RX-8	
Board size	50×50〜510mm×450mm BOC, Bad Mark, and 2D barcode can be read only if board length is from 50mm to 350mm In long board mode (two boards can be produced simultaneously up to 420mm long).
Component height	3mm
Component size	0201〜□5mm
Placement speed (Optimum) Chip	100,000CPH
Placement Accuracy	±40μm (Cpk ≧1)
Feeder capacity	Upto 56 When using RF08AS
Power supply	3-phase AC200V, 220V 430V 220V - 430V requires a separate transformer
Apparent power	2.1kVA
Operating air pressure	0.5±0.05MPa
Operating air pressure	20L/ min ANR (during normal operation)
Machine dimensions (W x D x H) Depth D does not include the monitor, and height H does not include the signal light when the conveyor height is 900 mm.	998mm×1,893mm×1,530mm
Mass (approximately)	1,810 kg (with fixed bank)/ 1,760 kg (with bank changing)

NPM D3A

PANASONIC NPM D3A | High Volume Placer

Product information

The compact dual-beam NPM-D3A offers a reinforced frame, advanced head, and award-winning Multi Recognition Camera improve placement accuracy down to 30um, and capable achieving a maximum CPH of 92,000.

The NPM-D3 is an industry standard building block in high-speed, high volume applications ranging from automotive to industrial to medical. In fact, the vast majority of automotive EMS providers choose Panasonic Connect solutions.

Head system

Lightweight 16-nozzle head V3: This head can drive the X-Y axis simultaneously during component recognition and increase the placement speed by selecting the best path, with a maximum production cycle of 92,000 CPH (IPC9850 (1608): 66,200 CPH). In high production mode, high-speed placement can be achieved; in high-precision mode (high production mode: OFF), the maximum speed is 76,000 CPH, and different numbers of nozzles can be carried to meet various component placement needs.

Drive control evolution: The drive control of the head drive unit has been improved, shortening the movement time of the X-Z axis and further improving the placement speed. The new adsorption action calculation method improves the adsorption calculation of small components and improves effective productivity.

Visual recognition system: Equipped with a multi-mode recognition camera, it improves the component recognition speed and helps to achieve high-speed and high-precision placement operations. It can accurately identify a wide array of components from 0402mm to 120x90x28mm, and supports the placement of large-size connectors, special-shaped components, and advanced packaging types (such as PoP).

Feeding system: The feeder is replaceable and compatible with the CM and NPM series. It supports tape feeding, and the tape width is 4/8/12/16mm, which can meet the feeding needs of different components and ensure the continuity of production.

PCB processing system

Dual-track and single-track mode: In dual-channel mode, the PCB size is 50×50~510×300; in single-channel mode, the PCB size is 50×50~510×590. The dual-track conveyor can replace the substrate on one side while the component is being installed on the other side, which improves production efficiency and enables the production of heterogeneous substrates.

Fast substrate change: In dual-channel mode, the substrate change time can theoretically reach 0 seconds (no 0-second delay when the cycle time is 3.6 seconds or less); in single-channel mode, when the short conveyor is selected, the substrate change time is 3.6 seconds.

Other auxiliary systems

Automatic recovery (optional): It has the function of automatically recovering from picking or recognition errors, reducing downtime and improving equipment availability.

Remote operation (optional): It can be remotely operated through the central control station, reducing the working time of on-site operators and improving equipment utilization efficiency.

DGS setting optimization (optional): It can optimize the production settings of various different models of products, reduce the setup workload, and shorten the changeover time.

Head diagnosis (optional): Regularly and automatically diagnose the placement head, track the changes in the placement head status, avoid production losses caused by placement head problems, and facilitate timely maintenance.

Maintenance notification service: Provides a cloud-based contract service to upload machine information to the PFSC cloud, identify feeders and nozzles that need status inspection, and send a maintenance inspection recommendation list to customers.

Parameters

Model ID		NPM-D3A	
PCB dimensions (mm) Due to a difference in PCB transfer reference, a direct connection with NPM (NM-EJM9B) / NPM-W (NM-EJM2D) /NPM-W2 (NM-EJM7D) dual lane specs cannot be established.	Dual-lane mode	L 50 × W50 ~ L 510 × W 300	
	Single-lane mode	L 50 × W50 ~ L 510 × W 590	
PCB exchange time	Dual-lane mode	0s* *No 0s when cycle time is 3.6 s or less	
	Single-lane mode	3.6s* *When selecting short conveyors	
Electric source		3-phase AC 200, 220, 380, 400, 420, 480 V 2.7 kVA	
Pneumatic source (Only for main body)		0.5 MPa, 100 L /min (A.N.R.)	
Dimensions (mm) (Only for main body)		W 832 × D 2 652 (Dimension D including feeder cart) ×H 1 444 (Excluding the monitor, signal tower and ceiling fan cover.)	
Mass		1 680 kg (Only for main body : This differs depending on the option configuration.)	
Placement head		Lightweight 16-nozzle head V3 (Per head)	
		High production mode [ON]	High production mode [OFF]
Max. speed		46 000 cph (0.078 s/ chip)	38 000 cph (0.095 s/ chip)
Placement accuracy (Cpk≧1)		±37 µm/chip	±30 µm / chip (±25 µm / chip) [±25 µm placement support option. (Under conditions specified by Panasonic)]
Component dimensions (mm)		0402 chip *6 ~ L 6 × W 6 × T 3 (The 03015/0402 mm chip requires a specific nozzle/feeder.)	03015 *6*7/0402 chip (The 03015 /0402 mm chip requires a specific nozzle/feeder.) ~ L 6 × W 6 × T 3
Component supply	Taping	Tape : 4 / 8 / 12 / 16 mm	
		Max. 68 (4, 8 mm tape, Small reel)	

NPM-TT2

PANASONIC NPM-TT2
High-speed odd-form components placement machine

Product information

The NPM-TT2 complements the NPM platform with frontand rear tray towers plus feeder slots for tape reels. ltstwin tray configuration enables independent mode. dual-lane production, Additionally, its dual-lane board handlingallows increased production of one or more productssimultaneously: yet,easily converts to single-lane modefor larger board sizes.

Mounting head system

8 Nozzle mounting head: It has high versatility and can quickly complete the mounting tasks of a large number of standard components. The mounting speed varies under different PCB sizes, such as 18,000cph (0.20s/chip) under PC size and 17,460cph (0.21s/chip) under M size. In terms of mounting accuracy, it reaches ±40μm/chip (Cpk1), which can meet the high-precision mounting requirements of general standard components.

3 Nozzle mounting head V2: The maximum mounting pressure is 100N, which is designed for mounting special-shaped components, with strong adaptability and high precision. For example, when mounting QFP components, it can achieve an accuracy of ±30μm/QFP (Cpk1), and can handle components ranging from 0603 chip to L 150 x W 25 (diagonal152) x T 30.

Visual recognition system: It uses a multifunctional recognition camera, which has excellent recognition and inspection capabilities in the height direction of components, and realizes high-speed and high-precision recognition. Whether it is a special-shaped component or a tiny component, it can stably and efficiently complete the recognition work, ensure the accuracy of the component mounting position, and improve the overall mounting accuracy and efficiency.

Feeding system

Multiple feeding methods: Support multiple feeding methods such as tape, tray, and bar. When feeding with tape, the applicable tape width is 4 - 56/72/88/104mm; for tray feeding, the front and rear tray feeders support a maximum of 40 (20 each in the front/rear); when feeding with bars, the front and rear tray feeders support a maximum of 12 single bar feeders, and the front and rear feeder carts support a maximum of 28 single bar feeders.

Flexible supply unit configuration: The specifications of the supply unit can be selected and changed. By reorganizing the tray feeder or exchanging the trolley, it can easily meet the production needs of different component supply forms, shorten the line change time, and improve the adaptability of the production line. For example, the "Feeder cart batch exchange" system facilitates fast switching when producing different products and component types.

PCB processing system

Dual-track and single-track mode: In single-track mode, the PCB size is 50×50L ~ 510×590L (PC size) or 50×50L ~ 510×510L (M size); in dual-track mode, the PCB size is 50×50L ~ 510×300L (PC size) or 50×50L ~ 510×260L (M size).

Fast substrate change: In dual-track mode, the substrate change time can theoretically reach 0 seconds (no 0-second delay when the cycle time is 4.0 seconds or less); in single-track mode, the substrate change time is 4.0 seconds when there is no component on the back of the substrate.

Other auxiliary systems

Automatic warehouse and continuous production: Supports automatic warehouse, combined with non-stop line change and independent placement functions, to achieve continuous production and improve production efficiency. For example, offline settings in monorail mode are combined with setting navigation and trolley replacement to achieve non-stop line change.

Intelligent management and maintenance (partially optional): The automatic replacement function of the support pin can realize the automatic replacement of the support pin position, reducing the tediousness and errors of manual operation; the equipment also supports the switching of multiple component supply forms and the adjustment of equipment composition, providing users with convenient and efficient production solutions. In addition, it also provides functions such as maintenance notification services, such as uploading machine information to the cloud, identifying feeders and nozzles that need to be checked, and sending maintenance inspection suggestion lists to customers.

Parameters

Model		Panasonic NPM-TT2	
PCB dimensions	PC size	Single-lane mode	L50mmxW50mm-L510mmxW590mm
		Dual-lane mode	L50mmxW50mm-L510mmxW300mm
	M sizze	Single-lane mode	L50mmxW50mm-L510mmxW510mm
		Dual-lane mode	L50mmxW50mm-L510mmxW260mm
PCB exchange time		Single-lane mode	4.0s(With no component mounted on the reverse side of PCB)
		Dual-lane mode	0S*"No Os when cycle time is 4.0 s or less
Electric source		3-phase AC 200,220,380.400.420.480 V 2.5 KVA	
Pneumatic source		Min.0.5 MPa、200 L/min (A.N.R.)	
Dimensions*1		W1300mm*2 xD2798mm*3 xHI444mm*4	
Mass	M sizze	2 690 kg(Only for main body:This differs depending on the option configuration.)	
Placement head		Lightweight 8-nozzle head (Per head)	3-nozzie head v2*6(Per head)
Pacement	PC size	18 000 cph (0.20 s/chip)	7 200 cph(0.50 s/chip) 5 900 cph(0.61 s/QFP)
Speed		17 460 cph (0.21s/chip)	5 723 cph(0.63 s/QFP) 6 984 cph(0.52 s/chip)
Placament accuracy		±40um/chip	±40um/chip
(Cpk≥1)		±30μm/QFP □12mm ~□32mm	±30μm/QFP
		±50μm/QFP □12mmUnder	
Component dimensions (mm)		0402chip*6 to L32 xW32 xT12	0603chip-L150xW25(diagonal152)xT30
Compcnent supply	Taping	Tape:4 to 56/72mm	Tape:4 to 56/72/88/104mm
		Specifications for front/rear tray feeders :Max.52	
		Specifications for front/rear feeder carts :Max.120(Tape:4、8 mm)	
	Stick	Specifications for front/rear tray feeders:Max.12 (Single stick feeder)	
		Specifications for front/rear feeder carts:Max.28 (Single stick feeder)	
	Tray	Max.40 (Front supply unit : Max. 20 + Rear supply unit : Max. 20)	

NPM-W2

PANASONIC NPM-W2 | Modular Chip Mounter

Product information

The NPM-W2 amplifies the original NPM-W capabilities with a 10% throughput boost and 25% more accuracy. It also integrates new innovations like our incomparable Multi Recognition Camera. Combined, these features extend the component range down to the 03015mm microchip, yet preserve capability up to 120x90mm components up to 40mm tall and nearly 6" long (150mm) connectors.

Featuring a revolutionary Multi Recognition Camera that uniquely combines three separate imaging capabilities into a single system: 2D alignment, component thickness inspection, and 3D coplanarity measurement.

1. Mounting head system

8-nozzle mounting head: highly versatile, suitable for standard component mounting tasks, and can quickly complete the mounting of a large number of components. The mounting speed is 18,000cph (0.20s/chip) in PC size and 17,460cph (0.21s/chip) in M size, and the mounting accuracy can reach ±40 μm/chip (Cpk≥1), which can meet the high-precision mounting requirements of general standard components.

3-nozzle mounting head V2: Maximum mounting pressure is 100N, optimized for mounting special-shaped components, with strong adaptability and high precision. When mounting QFP components, the accuracy can reach ±30μm/QFP (Cpk≥1), and it can handle components with sizes from 0603 chip to L 150 x W 25 (diagonal 152) x T 30.

2. Visual recognition system: It adopts a multi-functional recognition camera, which integrates multiple functions and has strong recognition and inspection capabilities in the height direction of components. It can realize high-speed and high-precision identification. Whether it is special-shaped components or tiny components, it can stably and efficiently complete the identification work, ensure the accuracy of component placement position, and improve the overall placement accuracy and efficiency.

3. Feeding system

Multiple feeding methods: support multiple feeding methods such as tape, tray, and bar. When feeding with tape, the applicable tape width is 4 - 56/72/88/104mm; in terms of tray feeding, the front and rear tray feeders support a maximum of 40 (20 front/rear); when feeding with bar materials, the front and rear tray feeders support a maximum of 12 single bar feeders, and the front and rear feeder carts support a maximum of 28 single bar feeders.

Flexible supply unit configuration: The specifications of the supply unit can be selected and changed. By reorganizing the tray feeder or exchanging the trolley, it can easily meet the production needs of different component supply forms, shorten the line change time, and improve the adaptability of the production line. For example, the "Feeder cart batch exchange" system is convenient for rapid switching when producing different products and different component types.

4. PCB processing system

Dual-track and single-track mode: In single-track mode, the PCB size is 50×50L ~ 510×590L (PC size) or 50×50L ~ 510×510L (M size); in dual-track mode, the PCB size is 50×50L ~ 510×300L (PC size) or 50×50L ~ 510×260L (M size).

Fast substrate replacement: In dual-track mode, the substrate replacement time can theoretically reach 0 seconds (no 0-second delay when the cycle time is 4.0 seconds or less); in single-track mode, when there is no component on the back of the substrate, the substrate replacement time is 4.0 seconds.

5. Other auxiliary systems

Automatic warehouse and continuous production: Support automatic warehouse, combined with non-stop line change and independent placement functions, continuous production can be achieved and production efficiency can be improved. Offline settings in single-track mode are combined with setting navigation and trolley replacement to achieve non-stop line change.

Intelligent management and maintenance (partially optional): The automatic support pin replacement function can realize the automatic replacement of the support pin position, reducing the tediousness and errors of manual operation; the equipment also supports the switching of various component supply forms and the adjustment of equipment configuration, providing users with convenient and efficient production solutions. In addition, it also provides maintenance notification services, such as uploading machine information to the cloud, identifying feeders and nozzles that need to be checked, and sending maintenance inspection recommendation lists to customers.

Parameters

Model ID		NPM-W2					
Rear head / Front head		Lightweight 16-nozzle head V3A	12-nozzle head	Lightweight 8-nozzle head	3-nozzle head V2	Dispensing head	No head
Lightweight 16-nozzle head V3A 12-nozzle head Lightweight 8-nozzle head 3-nozzle head V2		NM-EJM7D				NM-EJM7D-MD	NM-EJM7D
Dispensing head		NM-EJM7D-MD					NM-EJM7D
Inspection head		NM-EJM7D-MA					NM-EJM7D-A
No head		NM-EJM7D				NM-EJM7D-D	
PCB dimensions	Single-lane*1	Batch mounting	L 50 mm X W50 mm to L 750 mm X W 550 mm		2-positin mounting	L 50 mmxW50 mm to L 350 mmXW 550 mm	
	Dual-lane*1	Dual transfer(Batch)	L 50 mm xW50 mm to L750mm XW260 mm		Dual transfer(2-positin)	L 50 mm xW50 mm to L350 mm x W260 mm	
			Single transfer(Batch) | L 50 mm xW50 mm to L750 mm x W510 mm		Single transfer(2-positin)	L 50 mm X W50 mm to L 350 mmX W 510 mm	
Electric source		3-phase AC 200,220,380,400,420,480V 2.8 kVA					
Pneumatic source ·		0.5 MPa、200L/min(A.N.R.)					
Dimensions·		W1 280mmX D 2 465mmxH1 444mm /W 1 280 mmx D 2323 mmx H 1 444 mm *5					
Mass		2 850 kg**		/ 2 780 kg *5			
Placement head		Lightweight 16-nozzle head V3A (Per head)		12-nozzle head (Per head)		Lightweight 8-nozzle head(Per head)	3-nozzle head V2 (Per head)
		High production mode [ON]	High production mode [OFF]	High production mode [ON]	High production mode [OFF]		
Placement speed *at optimum conditions		42 000 cph(0.086s/ chip	35 000 cph (0.103 s/chip)	32 250 cph (0.112s /chip)	31 250 cph(0.115s/ chip)	20 800 cph(0.173 s / chip)	8 320 cph (0.433 s / chip) 6 500 cph(0.554 s /QFP)
Placement accuracy (Cpk≥1) *at optimum conditions		±40 μm/ chip	±30μm/ chip (±25μm/chips)	±40 μm/ chip	±30μm/ chip	±30μm/chip ±30μm/QFP-7	±30 μm/QFP
Component dimensions(m)		0402-achip toL85xW85xT3/T6∞	03015**/0402≤chip to L8.5xW8.5xT3/T6	0402-≥chip to L 12 xW 12 x T 6.5		0402-achip to L 45 x W 45 x T 12 or L 100 x W 40 x T 12	0603 chip to L120 xW90xT30/T4011 or L150XW25XT30/T40mm or L 135 xW 135 x T 13.12
Component supply	Taping	Tape:4/8/12/16/24/32/44/56mm				Tape:4 to 56/72mm	Tape:4 to 56/72/88/104mm
	Stick					Max.30(Single stick feeder)	
	Tray					Max.40(Twin tray feeder)	
Dispensing head		Dot dispensing		Draw dispensing			
Dispensing speed		0.16 s/ dot(Condition:XY=10 mm,Z=less than 4 mn movement, No θ rotation)		4.25 s/component (Condition:30 mmx30mm corner dispensing)*4			
Adhesive position accuracy(Cpk≥1)-13		±75μm/ dot		±100μm/ component			
Applicable components		1608 chip to SOP,PLCC,QFP,Connector,BGA,CSP		BGA、CSP			
Inspection head		2D inspection head (A)		2D inspection head (B)			
Resolution		18 μm		9μm			
View size		44.4mmx 37.2 mm		21.1 mm x 17.6mm			
Inspection processing time *15	Sold er Inspection-s	0.35 s / View size					
	Component Inspection. l 16	0.5 s / View size					
Inspection object	Solder Inspection -	Chip component:100 μm x 150 μm or more (0603 or more) Package component :150 μ m or more		Chip component: 80 μmx120 μm or more (0402 or more) Package component: φ120 μm or more			
	Component Inspection	Square chip (0603 or more),SOP,QFP (a pitch of 0.4 mm or more),CSP,BGA,Aluminum electrolysis capacitor, Volume, Trimmer,Coil,Connector·		Square chip (0603 or more),SOP,QFP (a pitch of 0.4 mm or more),CSP,BGA,Aluminum electrolysis capacitor, Volume, Trimmer,Coil,Connector·			
Inspection items	Sold er Inspection -	Oozing, blur, misalignment, abnormal shape, bridging					
	Component Inspection .1 s	Missing, shift, flipping, polarity, foreign object inspection+18					
Inspection position accuracy (Cpk&l)-9*at optimum conditions		±20 μm		±10μm			
No .of inspection	Solder Inspection-s	Max.30 000 pcs ./machine(№of components: Max.10 000 pcs./machine)					
	Component Inspection -16	Max.10 000 pcs./ machine					

NPM-W2S

PANASONIC NPM-W2S | High-flexible placement machine

Product information

The highly flexible single-beam NPM-W2S is an ideal placement solution for manufacturers who value reduced setup and changeover time over volume... At a time when your lot sizes are getting smaller, customers need to tighten control of work in process, schedule more efficiently and expand feeder capacity. This need is the premise behind the NPM-W2S. The NPM-W2S is based on the NPM-W2 platform, but with the simplification of employing a single beam to access all 120 8mm inputs for increased flexibility, with an output of 38,500 CPH and accuracy of 30um. The NPM-W2S enables customer to afford more platforms per line to increase available feeder capacity for common setups and reduced changeover. The NPM-W2S also makes an affordable line booster at the beginning or end of an existing NPM line.

Panasonic NPM-W2S is a single-beam placement machine developed based on the NPM-W2 platform. It is suitable for production scenarios that focus on reducing setup and conversion time and expanding feeder capacity. Its core component functions are as follows:

1. Placement head system

Multiple placement heads available: Provide lightweight 16-nozzle placement head, 12-nozzle placement head, lightweight 8-nozzle placement head, 3-nozzle placement head V2 and other options. Different placement heads are suitable for components of different types and sizes. For example, the 16-nozzle placement head is suitable for high-speed placement of small chips, and the 3-nozzle placement head V2 is more advantageous for placement of special-shaped components, with a maximum placement pressure of up to 100N.

Automatic recovery function: When a suction/recognition error occurs, for 4mm plastic (black), 8mm paper, and plastic (black) tape components, there is no need to stop the equipment. It can automatically correct the suction position and continue production, reducing downtime and improving production efficiency.

2.Visual recognition system: Using award-winning camera technology, it integrates component alignment, chip thickness measurement and 3D coplanarity inspection functions in one scan. It can accurately identify components, ensure accurate component placement, improve placement quality and production efficiency, and effectively detect component offset, thickness difference and pin coplanarity problems.

3.Feeding system

Large-capacity feeding: With 120 8mm input positions, it can connect more feeders to meet the feeding needs of various components, increase production flexibility and reduce the frequency of material changes.

Good feeder compatibility: The placement head, nozzle, tape feeder, exchange trolley, etc. are interchangeable with the NPM series, which is convenient for users to expand and upgrade on the basis of existing NPM equipment, reducing equipment procurement and maintenance costs.

Flexible feeding methods: It supports a variety of component supply methods, such as reels, trays and rods, and also supports stacked rod feeding, which can meet the feeding of components in different packaging forms and adapt to diversified production needs.

4.PCB processing system

Dual-track and single-track mode: In single-track mode, the supported PCB size is 50×50 to 750×550 (Batch mounting) or 50×50 to 350×550 (2-position mounting); in dual-track mode, the supported PCB size is 50×50 to 750×260 for dual-track transmission (Batch), 50×50 to 350×260 for dual-track transmission (2-position), 50×50 to 750×510 for single-track transmission (Batch), and 50×50 to 350×510 for single-track transmission (2-position), which can meet the production needs of PCBs of different sizes.

Quick line change: With the help of automation function, the line change time of each module only takes 3.5 minutes. By automatically switching the feeder and adjusting the placement program, fast line change can be achieved, which reduces the production preparation time, improves production efficiency, and adapts to small batch and multi-batch production mode.

5.Other auxiliary systems

PIP lighting unit: Equipped with PIP (Pin-in-Paste) lighting unit, it can identify the position and bending of the plug-in pins, ensure the accurate installation of the plug-in pin components, and improve the placement quality of the plug-in components.

Production tracking system: It has tracking functions from the work order level to the reference level, which can monitor and manage the production process throughout the process, realize complete path control, and facilitate production data statistics, quality traceability and production process optimization.

Parameters

Model ID			NPM-W2S Pick and place machine		
PCB dimensions(mm)	Single-lane*1	Batch mounting	L 50 x W 50 ~ L 750 x W 550		
		2-positin mounting	L 50 x W 50 ~ L 350 x W 550		
	Dual-lane*1	Dual transfer (Batch)	L 50 × W 50 ~ L 750 × W 260		
		Dual transfer (2-positin)	L 50 × W 50 ~ L 350 × W 260		
		Single transfer (Batch)	L 50 × W 50 ~ L 750 × W 510		
		Single transfer (2-positin)	L 50 × W 50 ~ L 350 × W 510		
Electric source			3-phase AC 200, 220, 380, 400, 420, 480 V 2.0 kVA		
Pneumatic source			0.5 MPa, 200 L /min (A.N.R.)		
Dimensions *2 (mm)			W 1 280 *3 × D 2 477 *4 × H 1 444 *5		
Mass			2 390 kg (Only for main body:This differs depending on the option configuration.)		
Placement head		Lightweight 16-nozzle head	12-nozzle head	Lightweight 8-nozzle head	3-nozzle head V2
Max. speed		38 500cph (0.094 s/ chip)	32 250cph (0.112 s/ chip)	20 800cph (0.173 s/ chip)	8 320cph (0.433 s/ chip) 6 500cph (0.554 s/ QFP)
Placement accuracy (Cpk≦1)		±30 µm / chip (±25µm / chip*6)	±30 µm / chip	+30um/chip+30 µm/QFP 12mm32mm±50 µm/QFP 12mm Under	± 30 µm/QFP
Component dimensions (mm)		03015*7 *8/0402*7 chip ~ L 6 x W 6 x T 3	0402*7 chip ~ L 12 x W 12 x T 6.5	0402*7 chip ~ L 32 x W 32 x T 12	0603 chip to L 150 x W 25 (diagonal152) x T 30
Component supply		Taping	Tape : 4 / 8/ 12 / 16 / 24 / 32 / 44 / 56 mm	Tape : 4 to 56 mm	Tape : 4 to 56 / 72 / 88 / 104 mm
			Max.120 (Tape: 4, 8 mm, Small real)	Front/rear feeder cart specifications : Max.120 (Tape width and feeder are subject to the conditions on the left) (Tape width and feeder are subject to the conditions on the left) (Tape width and feeder are subject to the conditions on the left)	
		Stick		Frontrear feeder cart specificationsMax.15 (Single stick feeder)Single tray specifications Max.15 (Single stick feeder)Twin tray specifi cations Max15 (Single stick feeder)	
		Tray		Single tray specifications : Max.20 Twin tray specifications : Max.40	

S10

YAMAHA S10 | 3D hybrid universal module placement machine

Product information

The S10 model has 3D placement capabilities. It can realize 3D placement with interactive solder paste dispensing and component placement through the newly developed interchangeable dispensing head; it can be expanded to 3D MID placement, and can operate on concave and convex, inclined and curved surfaces to meet the needs of automotive, medical, communication equipment and other fields. It can handle large and long substrates with a maximum size of L1,330 x W510mm (when the buffer function is not used), and can be accurately positioned by laser sensors to adapt to PCBs of different shapes and sizes. It also has a variety of component processing: it can handle components from 0201mm to 120 x 90mm, including BGA, CSP, connectors, etc.; the maximum component height is 30mm (including substrate thickness); the maximum feeder capacity is 90 types (converted to 8mm tape), and supports multiple feeding methods.

Its placement speed and accuracy have reached 0.08 seconds/CHIP (45,000CPH) under the best conditions for 12-axis 20-head unit, CHIP placement accuracy ±0.040mm, IC placement accuracy ±0.025 mm, and placement angle ±180 degrees. Its equipment size is L1,250 x D1,750 x H1,420mm and weighs about 1,200kg. It also has negative pressure and image dual component return detection function and color reference mark recognition camera with new lighting unit to improve recognition accuracy; and supports multi-language operation interface. Its feeder compatibility is strong, and new and existing material change trolleys can be mixed and used.

1. Mounting head system

High-speed and high-precision mounting: Equipped with 12-axis 20-mounting head units, the mounting speed can reach 0.08 seconds/CHIP (45,000CPH) under optimal conditions, the CHIP mounting accuracy is ±0.040mm (μ+3σ), the IC mounting accuracy is ±0.025mm (μ+3σ), and the mounting angle range is ±180 degrees. It can meet the mounting needs from 0201mm tiny chips to 120×90mm large components, including BGA, CSP, connectors and other special-shaped components.

Z-axis and θ-axis control: Both the Z-axis and the θ-axis are controlled by AC servo motors to achieve precise height adjustment and angle control, ensuring the position accuracy of components during the mounting process. It can handle components with a maximum height of 30mm (the maximum height of the first mounted component is 25mm), and has a real-time force control function, which can reduce the force on the components and is suitable for mounting pressure-sensitive components and plug-in components.

Nozzle exchange function: Supports automatic identification of nozzle IDs. Automatic nozzle replacement uses a 24-hole (standard) and 40-hole (optional) nozzle exchange station. The nozzles can be freely discharged on the nozzle exchange station, which is convenient for quickly replacing the appropriate nozzle according to the component type and improving production efficiency. In addition, by adopting a newly developed dispensing head that can be interchanged with the mounting head, 3D mounting that interacts with solder paste dispensing and component mounting becomes possible, realizing mixed mounting.

2. Feeder system

Multiple feeding methods compatible: Supports 8-56mm tape (F1/F2 feeder), 8-88mm tape (F3 electric feeder), rod feeder and tray and other feeding methods, which can meet the feeding needs of components in different packaging forms and enhance production flexibility.

Large-capacity feeding capacity: The maximum number of feeders is 90 (45 × 2) converted to 8mm tape, which can accommodate multiple different types of components at the same time, reduce frequent material changes, and improve production continuity.

Feeder compatibility: The new material change trolley with 45 feeder tracks can be mixed with existing material change trolleys, such as F3 electric feeder one-time material change trolley "CFB-45E", "CFB-36E", F1/F2 pneumatic feeder one-time material change trolley "CFB-36", etc. Users can freely choose the combination according to production needs and budget.

3. PCB handling system

Large-size and diversified substrate handling: Supports PCBs of various sizes, with a minimum size of L50 x W30mm and a maximum size of L1,330 x W510mm (standard L955) when the buffer function is not used; with a maximum size of L420 x W510mm when the inlet or outlet buffer function is used; with a maximum size of L330 x W510mm when the inlet and outlet buffer functions are used. It can handle PCBs with a thickness of 0.4 - 4.8mm, and can cope with the production of circuit boards with different shapes and sizes, including long-sized substrates, which enhances the applicability of the equipment.

Efficient conveying system: The substrate conveying direction defaults to left to right, and the conveying speed can reach a maximum of 900mm/sec. Equipped with input and output buffer conveyor belt systems, the best conveying settings can be automatically selected according to the PCB size. Laser sensors are used for substrate positioning. Without the need for mechanical PCB stops, they can automatically provide optimal positioning for PCBs of various sizes and shapes (including PCBs with cutouts), improving transmission accuracy and efficiency.

Flexible positioning and clamping: Through the clamp-in substrate fixing unit, the front side reference, and the automatic adjustment of the transmission width, the PCB can be accurately positioned and stably clamped to ensure that the PCB position is fixed during the mounting process and reduce mounting errors.

4. Vision and inspection system

Component take-back detection: Negative pressure inspection and image inspection are used to determine whether the component is taken back after mounting, and to detect mounting abnormalities in time to avoid problems such as missing or over-mounting, thereby ensuring mounting quality.

Color reference mark recognition camera: The reference mark recognition camera uses a color camera and is equipped with a newly developed lighting unit, which can easily cope with dispensing inspection. By accurately identifying the reference mark, the accuracy of component mounting and the accuracy of overall production can be improved. In addition, the standard wide-field reference camera can identify workpieces based on the best color elements of the workpiece (reference mark and installed components).

Powerful component recognition capability: The standard camera can recognize components from 0402mm to 120x90mm (optional support for 0201mm and above), and can handle the recognition process of almost all components, without worrying about component specifications. The optional rear multi-scan camera can ensure more efficient component placement, further improving the adaptability and placement efficiency of the equipment for different components.

5. Motion control system: The AC servo motor controls the movement of each axis, combined with a high-precision mechanical structure to ensure the stability and positioning accuracy of the placement head and PCB during movement, meet the high-speed and high-precision placement requirements, and achieve precise placement operations. Although the document does not elaborate on the specific details of motion control, it can be inferred from the placement accuracy and speed indicators that its motion control system has excellent performance.

6. Other systems

Multilingual operation interface: Supports operation interfaces in multiple languages such as English, Chinese, Korean, and Japanese, which is convenient for operators in different regions to use, reduce the difficulty of operation, and improve the versatility and ease of use of the equipment.

3D MID mounting expansion capability: It can be expanded to mount 3D MID (three-dimensional molded interconnect device). The equipment can perform solder paste dispensing and component mounting on three-dimensional objects with different heights, angles and directions such as concave and convex surfaces, inclined surfaces, and curved surfaces, providing the possibility of 3D MID production in the fields of automotive, medical, and communication equipment, and expanding the application scope of the equipment.

Flexible configuration and switchability: Users can freely choose different front and rear, left and right feeder configurations according to production needs and budgets, and can also use a full range of modification kits to achieve the conversion between fixed feeder groups and feeder carts/tray feeders. It has strong versatility and switchability, and can adapt to diverse production needs.

Parameters

Model	S10
Board size(with buffer unused)	Min. L50 x W30mm to Max. L1,330 x W510mm (Standard L955)
Board size(with input or output buffer used)	Min. L50 x W30mm to Max. L420 x W510mm
Board size(with input or output buffer used)	Min. L50 x W30mm to Max. L330 x W510mm
Board thickness	0.4 - 4.8mm
Board flow direction	Left to right (Std)
Board transfer speed	Max 900mm/sec
Placement speed (12 heads + 2 theta) Opt. Cond.	0.08sec/CHIP (45,000CPH)
Placement accuracy A (+3)	CHIP +/-0.040mm
Placement accuracy B (+3)	IC +/-0.025mm
Placement angle	+/-180 degrees
Z axis control / Theta axis control	AC servo motor
Component height	Max 30mm*1 (Pre-placed components: max 25mm)
Applicable components	0201 (mm) - 120x90mm, BGA, CSP, connector, etc. (Standard 01005 -)
Component package	8 - 56mm tape (F1/F2 Feeders), 8 - 88mm tape (F3 Electric Feeders), stick, tray
Drawback check	Vacuum check and vision check
Screen language	English, Chinese, Korean, Japanese
Board positioning	Board grip unit, front reference, auto conveyor width adjustment
Component types	Max 90 types (8mm tape), 45 lanes x 2
Transfer height	900 +/- 20mm
Machine dimensions, weight	L1250xD1750xH1420mm, Approx. 1,200kg

S20

YAMAHA S20 | 3D hybrid universal placement machine

Product information

The Yamaha S20 fulfills the need for higher throughput in the flexible assembly and LED lighting sectors. The new high capacity head system addresses the need for faster cycle times and provides ultra-large PCB handling capabilities with higher placement rates. The highly flexible S20 is available with the new head system incorporating 12 spindles with a wide component handling range. The S20 utilises the same fast change feeder bank and tray handler capabilities as the popular M20 and has a feeder capacity of up to 180 feeder positions. The optional camera will allow placement of parts down to 0.2 x 0.1 mm fulfilling the current demands on reduced component and ball sizes.

1. Mounting head system

12-axis mounting head + 2θ rotation axis: adopts multi-nozzle design, supports mixed mounting of 0201 (0.2×0.1mm) to 120×90mm special-shaped components (such as BGA, CSP, connector), and the theoretical mounting speed reaches 45,000 CPH (under optimal conditions).

Dynamic pressure control: adjust the Z-axis height and pressure through AC servo motor to adapt to different component thicknesses (up to 30mm) to prevent damage to precision components.

θ axis control: supports ±180° rotation mounting to ensure accurate positioning of component polarity.

2. Vision and inspection system

Dual precision recognition mode: mounting accuracy A (chip components): ±0.040mm @ μ+3σ. Mounting accuracy B (IC components): ±0.025mm @ μ+3σ.

Image inspection and negative pressure detection: check component polarity and pin status through image recognition technology, and determine whether the component is brought back in combination with negative pressure sensor to reduce the throw rate.

Standard multi-vision camera and laser unit support rapid identification of sheet components and special-shaped devices.

3. Feeder system

Mixed feeder compatibility: supports 8-88mm electric feeders (F3 series), 8-56mm tape feeders (F1/F2 series), rod feeders and tray-mounted components, with a maximum feeder capacity of 180 types (calculated based on 8mm tape).

Smart Feeder technology: automatic material connection and material shortage warning, reducing manual intervention and improving continuous production efficiency.

4. PCB processing capacity

Ultra-large substrate compatibility: supports substrates from a minimum of 50×30mm to a maximum of 1,830×510mm (standard size 1,455×510mm) in standard mode, and supports long substrate production (such as LED light boards) after expansion.

Buffer function optimization: When using entry/exit buffers, it can handle substrates up to 540×510mm to meet high-frequency line change requirements.

Transmission speed and stability: The substrate transmission speed reaches 900mm/sec, equipped with a clamping fixing unit and automatic track width adjustment function to ensure high-precision positioning.

5. Motion control system

High-precision linear drive: The X/Y axis uses linear motors and magnetic suspension technology, -with a 0.001mm resolution magnetic scale to achieve micron-level positioning under high-speed movement.

Dual servo Y-axis drive: optimizes track transmission stability and reduces vibration during high-speed p-lacement.

6. Software and intelligent functions

Multilingual operation interface: supports Japanese, Chinese, Korean, and English, which facilitates global production management.

VIOS software system: real-time display of placement status, error alarms and correction information, integrated path optimization algorithm, shortening line change time.

Offline programming support: optimize component placement sequence and improve production efficiency through CAD data import and simulation debu

Parameters

Model	S20
Board size(with buffer unused)	Min. L50 x W30mm to Max. L1,830 x W510mm (Standard L1,455)
Board size(with input or output buffer used)	Min. L50 x W30mm to Max. L540x W510mm
Board thickness	0.4 - 4.8mm
Board flow direction	Left to right (Std)
Board transfer speed	Max 900mm/sec
Placement speed (12 heads + 2 theta) Opt. Cond.	0.08sec/CHIP (45,000CPH)
Placement accuracy A (+3)	CHIP +/-0.040mm
Placement accuracy B (+3)	IC +/-0.025mm
Placement angle	+/-180 degrees
Z axis control / Theta axis control	AC servo motor
Component height	Max 30mm*1 (Pre-placed components: max 25mm)
Applicable components	0201 (mm) - 120x90mm, BGA, CSP, connector, etc.
Component package	8 - 56mm tape (F1/F2 Feeders), 8 - 88mm tape (F3 Electric Feeders), stick, tray
Drawback check	Vacuum check and vision check
Screen language	English, Chinese, Korean, Japanese
Board positioning	Board grip unit, front reference, auto conveyor width adjustment
Component types	Max 180 types (8mm tape), 45 lanes x 4
Transfer height	900 +/- 20mm
Machine dimensions, weight	L1750 x D1750 x H1420mm, Approx. 1450kg

YRM 10

YAMAHA YRM10 | Compact High-Speed Modular

Product information

Yamaha's YRM10 model is equipped with the advanced technology of the YRM series high-end system It is a small multi-functional high-speed placement machine with excellent cost performance and high placement capacity, realizing value-added production of economical products, and achieving zero-defect production with high placement accuracy and rich functions. It brings excellent ease of use because of the simple single-head operation.

1. Mounting head system

High-speed multifunctional inline mounting head (HM Head) Placing capacity: equipped with 10 nozzles, supporting from ultra-small components 0201 (0.25×0.125mm) to medium-sized components 100×55mm ×15mm (height), covering BGA, CSP, connectors and other special-shaped components, with a maximum mounting speed of 52,000 CPH (optimal conditions), meeting high-density mounting requirements.

High-precision control: Mounting accuracy ±35μm (Cpk≥1.0), reducing thermal deformation by optimizing the X-axis beam structure, ensuring tight mounting of ultra-small components (such as 0201 component spacing ≤0.3mm).

Intelligent identification and efficiency: The head integrates a scanning camera to identify component posture in real time and dynamically optimize the path, reduce invalid movement, and improve productivity; supports automatic nozzle replacement (24 holes standard / 40 holes optional), and the nozzle has ID management for easy maintenance and calibration.

Defect detection function

Side view camera: detects "standing pick" (skew, tombstone) of chip components to avoid defective product placement.

Coplanarity checker (optional): detects lead warping of tray components (such as QFP pin coplanarity) to prevent poor welding.

2. Feeder system Large capacity and multi-type support

Reel feeding: supports up to 96 components (8mm tape conversion), compatible with 8-56mm tape (F1/F2 feeder), 8-88mm electric tape (F3 feeder), supports continuous feeding and fast material change.

Pallet feeding: optional multi-shelf pallet feeder sATS15R, supports 15 types of pallet components, realizes efficient pallet component supply, and reduces manual intervention.

Lightweight design: uses ultra-thin and lightweight feeder, supports automatic loading (AutoLoading Feeder), shortens material change time by 30%, and improves operation convenience.

Compatibility and flexibility

Supports mixed use of new and old material change trolleys (such as CFB-45E/CFB-36E) to adapt to different production scenarios; tray and reel feeding can run simultaneously to meet the mixed production of multiple varieties.

3. PCB processing system Substrate size and transmission

Size range: Standard support 50×50mm ~ 510×460mm, optional expansion to 950mm length, suitable for small consumer electronic substrates to medium-sized industrial circuit boards.

Transmission and positioning: The maximum transmission speed is 900mm/sec, equipped with a laser sensor to automatically adjust the transmission width, no mechanical block is required, and compatible with cutouts or special-shaped substrates; the substrate is fixed with a front reference + clamping unit to ensure stability and no offset during mounting.

Diversified production mode

Supports single-track production, adapts to high-density mounting and long-size substrates, and meets the needs of complex circuit boards such as vehicle-mounted and communication equipment.

4. Vision and inspection system Component identification and inspection

Scanning camera: integrated into the placement head, supports high-speed identification of components within 12×12mm (such as BGA ball grid array), identification time ≤0.1 second/component, reduces the head movement distance, and improves efficiency.

Negative pressure + image dual detection: real-time detection of whether the component is adsorbed successfully after picking up, avoiding missing or over-adhesion, and the defect detection rate is ≥99.9%.

Quality assurance function

Automatic nozzle cleaning: standard cleaning station, regular removal of nozzle contaminants, maintain stable adsorption force; nozzle ID tracking, record usage status, prevent placement deviation caused by nozzle wear.

5. Motion control system

Drive technology: X/Y axis uses AC servo motor, with high-precision linear guide rail, to achieve high-speed and stable movement, placement head positioning accuracy ±35μm, repeated positioning error ≤±15μm, meet the fine pitch component placement below 0.4mm.

Dynamic path optimization: Automatically plan the shortest path according to component distribution, reduce idle time, and improve single substrate production efficiency by about 15%.

6. Other core systems

Intelligent software and operation

Automatic data creation: Support CAD data import, automatically generate placement programs, and shorten the time for new product introduction by 50%; equipped with a multi-language interface (Chinese/English/Japanese/Korean), easy to operate.

Remote monitoring and traceability: Compatible with Yamaha's smart factory system, real-time upload of production data (such as placement coordinates, nozzle status), support full-process quality traceability, and meet the traceability requirements of industries such as automotive electronics.

Hardware design and maintenance

Compact structure: The body size is 1,254×1,440×1,445mm and weighs about 1,230kg, saving workshop space and suitable for compact production line layout.

Tool-free maintenance: The nozzle bracket can be replaced with one button, and the automatic nozzle cleaner supports batch maintenance, reducing daily maintenance time by 40%.

Parameters

Model	YRM10
Applicable PCB	L50 x W50mm to L510 x W460mm (Optionally able to support lengths up to 950 mm)
Applicable components	0201mm to L100 x W55mm, Height 15mm or less
Mounting capability (Under our optimized conditions)	52,000CPH
Mounting accuracy (Under our optimized conditions)	±0.035mm Cpk≧1.0
Number of component types	Reel components : Max. 96 types (conversion for 8mm tape feeder)
	Tray components : 15 types (when equipped with sATS15R)
Power supply	3-Phase AC 200/208/220/240/380/400/416V +/-10% 50/60Hz
Air supply source	Over 0.45 MPa, clean and dry state
External dimension	L1,254 x W1,440 x H1,445mm
Weight	Approx. 1,230kg (Main unit only)

YRM20

YAMAHA YRM20 | Premium High efficiency modular placement machine

Product information

The 1 head solution has reached an ultimate stage. YRM20 is an all-around surface mounter delivering both overwhelming productivity and flexibility! Fusion with Σ technology achieves overwhelming productivity Broad-ranging production capability thanks to the 1 head solution Standard features that maintain component mounting quality at a peak level. Ensures high-efficiency production with a full range of functions.

1. Placement head system

High-speed rotary head (RM head): adopts new rotary head technology, equipped with 18 nozzles, supports 0201 (0.25×0.125mm) to 12×12mm components, and the theoretical placement speed reaches 115,000 CPH (under optimal conditions), which is suitable for high-speed placement of microchips.

Sigma technology optimization: reduce the impact of thermal deformation and ensure the placement accuracy of ±25μm (Cpk≥1.0).

In-line multifunctional head (HM head): equipped with 10 nozzles, supports 55×100mm large components (maximum height 15mm), and the placement speed reaches 98,000 CPH, achieving a balance between high speed and high compatibility.

Servo system upgrade: dynamic pressure control range is wider (0.1N~100N), adapting to the stable placement of special-shaped components (such as connectors and heat sinks).

2. Feeder system

High-capacity feeder configuration: supports 128 component types, compatible with 8mm to 56mm electric belt feeders, adopts batch exchange material cart design (32 stations × 4 groups) to improve line change efficiency.

New high-speed feeder: improves the material belt supply speed, reduces the waiting time for component picking, and optimizes production efficiency.

3. Vision and inspection system

Multi-mode recognition technology: Online image recognition camera: supports regional image and linear image switching, flexibly responds to pin and polarity detection of complex components (such as BGA, QFP), and improves recognition accuracy.

Laser sensor (LNC): real-time monitoring of component height and position, reducing placement errors caused by nozzle wear or contamination.

4. PCB processing capabilities

Large-size substrate support: standard substrate size 50×50mm~810×510mm, supports dual-track transmission mode, and can be expanded to a maximum of 1,200×510mm long substrate (suitable for scenes such as LED light boards).

Overspeed transmission technology: optimize substrate transmission speed, shorten replacement time, and improve continuous operation efficiency of production lines.

5. Motion control system

Linear motor drive: X/Y axis adopts high-precision linear motor and magnetic suspension technology, combined with 0.001mm resolution magnetic ruler, to achieve micron-level positioning stability under high-speed motion.

Dual servo Y-axis drive: reduce track vibration and ensure the accuracy consistency of long substrate placement.

6. Intelligent software and operation interface

New GUI interface: The operation interface is redesigned to support intuitive graphical control, simplify parameter setting and program debugging process, and lower the operation threshold.

Offline programming and simulation: optimize the placement path through CAD data import, shorten the line change time to minutes, and improve the flexibility of the production line.

M2M solution: integrated traceability function, record the full process data of components from feeding to placement, support fast analysis of defective products and process improvement.

Parameters

Model	YRM20		
	Super high-speed rotary RM head	High-speed general-purpose in-line HM head	Odd-shaped components in-line FM (flexible-multi) head
Nozzles (per 1 head unit)	18	10	5
Applicable components	0201mm to W12 x L12mm, Height 6.5mm or less	0201mm to W55 x L100mm, Height 15mm or less	03015mm to W55 x L100mm, Height 30mm or less
Mounting capability under optimum conditions (in high production mode)	2-beam : 115,000CPH (under optimum conditions) 1-beam : 57,500CPH (under optimum conditions)	2-beam : 98,000CPH (under optimum conditions) 1-beam : 49,000CPH (under optimum conditions)	2-beam : 35,000CPH (under optimum conditions) 1-beam : 17,500CPH (under optimum conditions)
Mounting accuracy (high-accuracy mode)	±0.025mm Cpk≧1.0 (under optimum conditions)		±0.035mm Cpk≧1.0 (under optimum conditions)
Number of component types	Feeder carriage exchange : Max. 128 types = 32 feeders x 4 (conversion for 8mm tape feeder)		
	Fixed plate : Max. 128 types (conversion for 8mm tape feeder), Trays : 60 types (maximum when equipped with eATS30 x 2)		
PCB dimensions	1-beam : (Single lane)		
	Standard specifications : L50 x W50mm to L510 x W510mm, option : L50 x W50mm to L810 x W510mm		
	2-beam : (Dual stage)		
	1-PCB conveyance : L50 x W50mm to L810 x W510mm, 2-PCB conveyance : L50 x W50mm to L380 x W510mm		
Power supply	3-Phase AC 200/208/220/240/380/400/416V +/-10% 50/60Hz		
Air supply source	0.45MPa or more, in clean, dry state		
External dimension (excluding projections)	L1,374 x W1,948 x H1,445mm		
Weight	2-beam : Approx. 2,250kg (Main unit only), 1-beam : Approx. 2,150kg (Main unit only)		

YRM20DL

YAMAHA YRM20DL | Super High Efficiency Dual Lane Modular placement machine

Product information

The YRM20DL is a dual track surface mount machine with excellent productivity, flexibility and PCB placement capabilities. It provides a wide range of production capabilities as a single head solution, suitable for multi-variety and multi-batch production. It can achieve high-precision placement and stable production of micro components.

1. Placement head system

Multi-function placement head configuration

RM ultra-high-speed turret placement head (18 nozzles), placement capacity: maximum placement speed 120,000 CPH (optimal conditions, for 0201mm ultra-small chips), supporting component range 0201mm~12×12mm×6.5mm (height), covering small resistors and capacitors to medium-sized special-shaped components.

Technical features: The turret design realizes high-speed rotation pickup, and the integrated scanning camera detects the component posture in real time, and can cope with high-density placement of ultra-small components without replacing the placement head.

HM high-speed universal in-line placement head (10 nozzles), placement capacity: placement speed 100,000 CPH (chip type), supporting component range 0201mm~55×100mm×15mm (height), compatible with BGA, CSP, connectors and other special-shaped components.

Intelligent optimization: The head integrates a scanning camera to automatically identify the component position and dynamically plan the path, reducing the idle time and improving the efficiency of mounting medium and large components.

FM special-shaped component inline mounting head (5 nozzles), mounting capacity: supports 03015mm ultra-micro components ~ 55×100mm×30mm (height) large components, equipped with force control function, which can accurately control the mounting pressure and adapt to plug-in components with high precision requirements (such as connectors).

Unified mounting head solution: It can cover 0201mm ultra-small to 100mm large components without changing the mounting head, reducing the changeover time, improving production flexibility, and adapting to mixed production of multiple varieties.

2. Feeder system

Multi-type feeding support

Reel feeding: The fixed feeder rack supports 128 components (8mm tape conversion), is compatible with 8-56mm pneumatic tape (F1/F2) and 8-88mm electric tape (F3), supports automatic loading (AutoLoading Feeder), and shortens the material change time by 30%. The electric smart feeder (ZS/SS series) is fully compatible with the YS series, supports continuous feeding and offline pre-setting, and reduces manual intervention.

Tray feeding (optional): Equipped with eATS30 automatic tray replacement unit, supports 30-layer JEDEC standard trays, realizes uninterrupted feeding of tray components, and is suitable for high-frequency changeover scenarios.

Rod feeding: Supports single-rod feeder, suitable for manual or automatic feeding of special-shaped components (such as connectors and heat sinks).

Flexibility and compatibility: Supports 4 sets of material change trolleys (CFB-45E, etc.), mixed use of new and old trolleys, with a maximum capacity of 128 components (8mm conversion), meeting the needs of multi-variety production.

3. PCB processing system

Substrate size and transmission, size range:

Single track mode: 50×50mm ~ 810×510mm (length × width), suitable for large industrial circuit boards;

Dual track mode: 50×50mm ~ 810×330mm (length × width), supports dual-track parallel production of different or the same substrates.

Transmission and positioning: The maximum transmission speed is 900mm/sec, equipped with a laser sensor to automatically adjust the transmission width, without mechanical stops, and compatible with cutouts or special-shaped substrates.

The substrate is fixed with a front reference + clamping unit, with a positioning accuracy of ±0.1mm, ensuring stability and no offset during placement.

Dual-track production mode

Parallel mode: Dual-track production of different substrates (such as mobile phone motherboard + automotive circuit board) to improve equipment utilization;

Alternating mode: Dual-track production of the same substrate to double production capacity;

Mixed mode: Flexible combination of parallel and alternating modes to adapt to complex production needs.

4. Vision and inspection system

Component identification and inspection

Side-view camera: Real-time monitoring of the component posture at the tip of the nozzle, detection of missing parts, tombstones, skew and other problems, defective product rejection rate ≥99.9%.

Scanning camera: Integrated in the placement head, supports high-speed identification of components within 12mm (such as BGA ball grid array), identification time ≤0.1 seconds/component.

Coplanarity detection (optional): Detect the coplanarity of component pins such as QFP to prevent poor welding and improve the yield of high-end packaging (such as SiP).

Quality assurance function

Automatic nozzle cleaning station: Regularly remove nozzle contaminants to maintain stable adsorption force; nozzle ID tracking management, automatic marking of worn nozzles.

Negative pressure detection: Real-time verification of component adsorption status after picking up to avoid missing or over-sticking.

5. Motion Control System

High-precision drive: AC servo motor + linear guide is used for X/Y axis, with mounting accuracy of ±15μm (Cpk≥1.0), and repeat positioning error ≤±10μm, which can meet the mounting of fine pitch components below 0.3mm.

Low-impact mounting: The substrate warping is measured by laser, the mounting height is adjusted dynamically, and the impact force is controlled below 50gf with lightweight suction nozzle to protect ultra-small components and flexible circuit boards<RichMediaReference>superscript:5</RichMediaReference>.

Path optimization: Automatically plan the shortest path based on component distribution, reduce the empty movement distance, and increase the production efficiency of a single substrate by about 20%.

6. Other core systems

Intelligent software and operation

Automatic data creation: Supports CAD data import, automatically generates mounting programs, and shortens the time for new product introduction by 50%; multi-language interface (Chinese/English/Japanese/Korean), easy to operate.

Remote monitoring and tracing: compatible with Yamaha smart factory system, real-time upload of production data (mounting coordinates, equipment status), supporting full-process quality tracing in industries such as automotive electronics.

Hardware design and maintenance

Compact dual-track structure: The body size is 1,374×2,102×1,445mm and weighs about 2,550kg, saving workshop space and suitable for high-density production line layout.

Tool-free maintenance: The nozzle bracket can be replaced with one button, and the automatic nozzle cleaner supports batch maintenance, reducing daily maintenance time by 40%; the feeder self-diagnosis function warns of faults in real time.

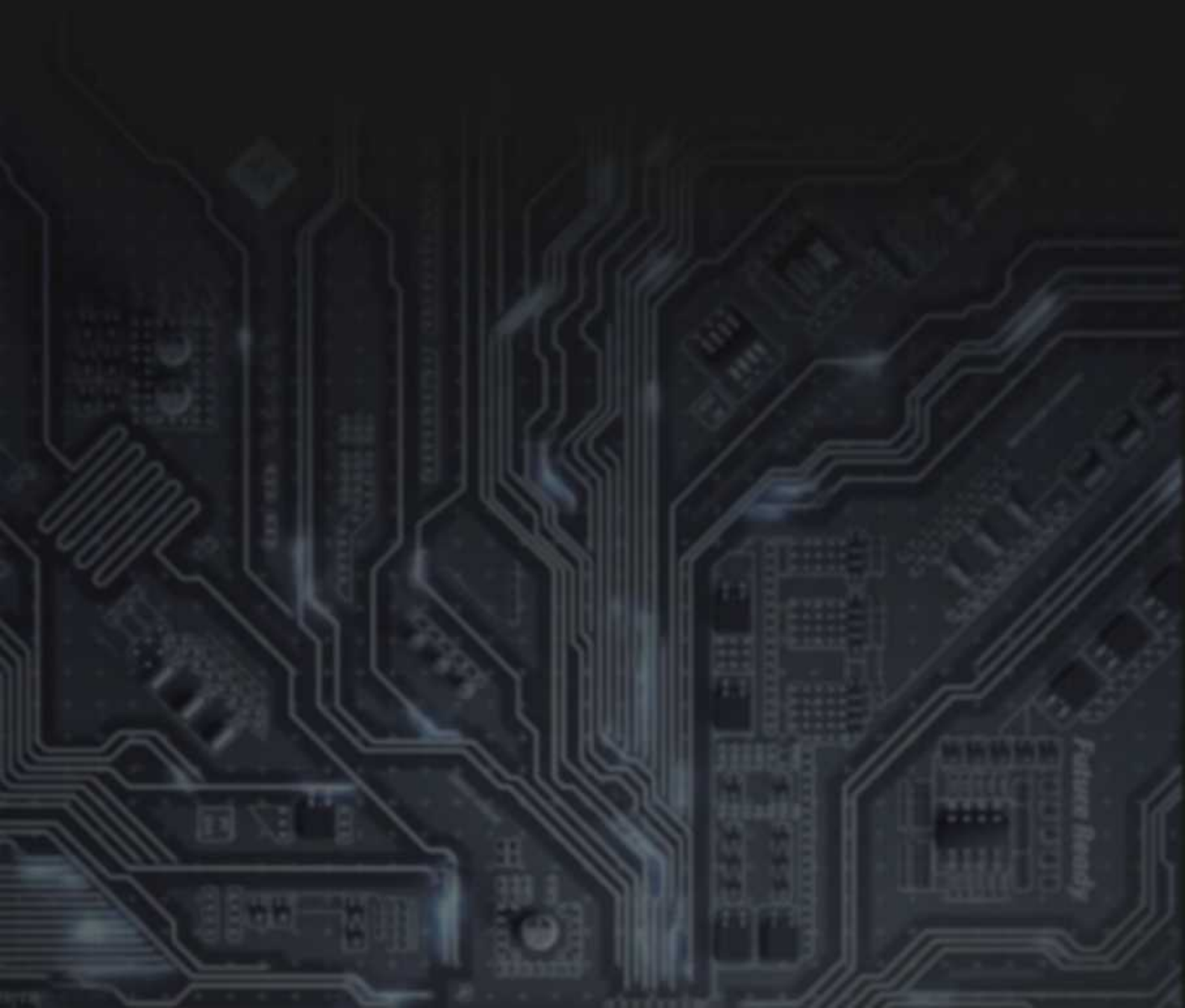
Automation function

Automatic ejector exchange: Automatically adjust the ejector position according to the mounting program, adapt to different substrate thicknesses and component layouts, and reduce manual intervention.

Uninterrupted production: The eATS30 tray feeder supports continuous feeding of 30 layers of trays, and cooperates with the automatic feeder to achieve seamless switching of reel components.

Parameters

RM head	HM head	FM head	
Super high-speed rotary	High-speed general-purpose in-line	Flexible head for odd shaped chips	
Nozzles, per 1 head unit	18	10	5
Applicable components	0201mm to W12 x L12mm, Height 6.5mm or less	0201mm to W55 x L100mm, Height 15mm or less	03015mm to W55 x L100mm, Height 30mm or less
Mounting capability (under optimum conditions)	120.000 CPH (In high production mode)	100.000 CPH (In high production mode)	2-beam: 35.000 CPH 1-beam: 17.500 CPH
Mounting accuracy Cpk ≥ 1.0	±15 µm (high-accuracy mode)	±15 µm (high-accuracy mode)	±35µm
Number of component types	Feeder cart:Max. 128 types = 32 feeders × 4 (conversion for 8 mm tape feeder) Fixed plate:Max. 128 types (conver-sion for 8 mm tape feeder) Trays:60 types (maximum when equipped with eATS30 x 2)		
PCB dimensions	Dual lane use:W50 x L50 mm to x L810 mm Single lane use:W50 x L50 mm to W610 x L810 mm		
Power supply	3-phase AC 200/208/220/240/380/400/416 V ±10% 50/60 Hz		
Air supply source	0.45 MPa or more, in clean, dry state		
External dimension (excluding projections)	L 1,374 x W 2,102 x H 1,445 mm		
Weight	Approx. 2.550 kg (main unit only)		



YSM10

YAMAHA YSM10 | Compact High-Speed modular

Product information

YSM10 is the entry-level placement machine of the YSM series, achieving the fastest speed and versat ility in its class. As a basic model, YSM10 can flexibly cope with various production configurations and en- sure stable production functions. It has a single-beam single-head placement machine, and the chip plac- ement performance under optimal conditions reaches 46000CPH

1. Mounting head system

Model and configuration: HM Head (10 nozzles): standard configuration, supports high-speed mounting, mounting speed of 46,000 CPH (chip components) under optimal conditions, compatible with ultra-small components 03015mm (0.3×0.15mm) to large components 55×100mm×15mm (height), covering BGA, CSP, connectors and other special-shaped components.

HM5 Head (5 nozzles): economical configuration, the function is the same as HM Head, the mounting speed is 31,000 CPH, suitable for budget-sensitive production

Technical features: integrated with a new scanning camera, supports high-speed identification of components within the range of 12mm, compatible with BGA/CSP ball grid array detection, and expands the size range of high-speed mounting components.

No need to replace the mounting head, a full range of components can be processed through a single head, reducing changeover time and improving production flexibility.

Precision and control: Mounting accuracy ±0.035mm (3σ, Cpk≥1.0), optimized for ultra-small components such as 0201, ensuring fine pitch mounting stability. Lightweight design and the same servo system as high-end models, excellent thermal deformation control and repeated positioning error during high-speed movement.

Defect detection and maintenance

Side view function: Real-time detection of component picking status (missing parts, skew, tombstone) to avoid mounting errors.

Automatic nozzle cleaning and health check: Standard nozzle cleaning station, regular removal of contaminants; support nozzle ID tracking, automatic disabling of abnormal nozzles, and maintenance of adsorption stability.

2. Feeder system

Reel feeding: Fixed feeder rack supports up to 96 components (8mm tape conversion), compatible with 8-56mm pneumatic tape (F1/F2) and 8-88mm electric tape (F3), supporting continuous feeding and fast material change.

The electric intelligent feeder (SS Feeder/ZS Feeder) is fully compatible with the YS series, supports automatic loading (AutoLoading), and shortens the material change time by 30%.

Tray feeding (optional):

Equipped with sATS15 automatic tray change unit, supports 15 JEDEC standard trays, and the tray spacing is 12.5mm, which improves the feeding efficiency of special-shaped components.

Flexibility and compatibility

Supports the mixed use of new and old material change trolleys (such as CFB-45E/CFB-36E), and adapts to the feeding configuration of different production scenarios.

Reels and trays can run at the same time to meet the needs of multi-variety mixed production and reduce the frequency of downtime for material change.

3. PCB processing system

Size range: Standard mode: 50×50mm ~ 510×460mm; optional expansion to 610mm (length) or 950mm (length), suitable for small consumer electronic substrates to medium-sized industrial circuit boards.

Conveying and positioning:

The maximum conveying speed is 900mm/sec, equipped with a laser sensor to automatically adjust the conveying width, without mechanical stops, and compatible with substrates with cutouts or special shapes.

The substrate is fixed with a front reference + clamping unit to ensure stability and no offset during placement, and positioning accuracy.

Production mode: supports single-track production, suitable for high-density placement and long-size substrates, and typical applications include automotive electronics and communication equipment motherboards.

4. Vision and inspection system

High-speed scanning camera: integrated in the placement head, with a field of view of 12mm, supports high-speed identification of components within 12mm×12mm (such as QFP, BGA), and the identification time is ≤0.1 seconds/component.

Multi-camera configuration (optional): handles components with a height > 6.5mm or a size > 12mm×12mm (such as high-type connectors) to ensure the placement accuracy of large-size components.

Double detection mechanism: negative pressure detection (adsorption state) + image detection (component posture), defective rejection rate ≥ 99.9%.

Intelligent optimization function

Automatic recognition optimizer (Smart Recognition): Automatically generate recognition data for complex-shaped components, reduce manual programming time, and reduce the error rate of picking.

Automatic compensation for picking position (Pickup MACS): Real-time correction of nozzle picking offset to improve the success rate of picking up ultra-small components.

5. Motion control system

Drive technology: Adopt a new generation of AC servo system (same as high-end models), X/Y axis linear guide to ensure high-speed motion stability, placement head positioning accuracy of ±35μm, support 0.3mm or less fine pitch component placement.

Path optimization: Automatically plan the shortest motion path based on component distribution, reduce idle time, and increase single substrate production efficiency by about 15%.

6. Other core systems

Automatic data creation: supports CAD data import, automatically generates mounting programs, and shortens the time for new product introduction by 50%; equipped with a multi-language interface (Chinese/English/Japanese/Korean), easy to operate.

Remote monitoring and traceability: compatible with Yamaha's smart factory system, real-time upload of production data (mounting coordinates, equipment status), meeting the full-process quality traceability needs of industries such as automotive electronics.

Hardware design and maintenance

Compact body: size 1,254×1,440×1,445mm, weight about 1,270kg, saves workshop space, suitable for compact production line layout.

Tool-free maintenance: nozzle bracket can be replaced with one button, nozzle cleaner supports batch automatic maintenance, and daily maintenance time is reduced by 40%.

Safety and compliance CE certification is met, and the design follows European safety standards to ensure safe operation worldwide.

Parameters

Applicable PCB	L 510 x W 460mm - L 50 x W 50mm
	Note : Available in lengths up to L950mm as an option.
Applicable components	03015mm to W55 x L100mm (For parts sizes larger the width 45mm, recognition of parts is divided into sections.), Height 15mm or less
	Note : A multi camera (option) is required for part heights exceeding 6.5mm or part sizes exceeding 12mm
Mounting capability	HM head (10 nozzle) specification : 46,000CPH (under optimum conditions as defined by Yamaha Motor)
	HM 5 head (5 nozzle) specification : 31,000CPH (under optimum conditions as defined by Yamaha Motor)
Mounting accuracy (Under optimum conditions as defined by Yamaha Motor when standard evaluation materials are used)	+/-0.035mm (+/-0.025mm) Cpk 1.0 (3σ)
Number of component types	Fixed plate : Max. 96 types (conversion for 8mm tape feeder) Note 1
	Tray : 15 types (maximum when equipped with sATS15, JEDEC)
Power supply	3-Phase AC 200/208/220/240/380/400/416V +/-10% 50/60Hz
Air supply source	0.45MPa or more, in clean, dry state
External dimension	L1,254 x W1,440 x H1,445mm
Weight	Approx. 1,270kg

YSM20R

YAMAHA YSM20R | Multi-function and High-efficiency Modular Placement Machine

Product information

The YSM20R is a versatile surface mount machine with the fastest placement speed in its class, taking the innovation of single-head placement solutions to a new level. Its placement speed is 5% faster than the YSM20. The YSM20R is equipped with a new wide-angle scanning camera, which is more adaptable to components. Optional functions can increase the production line operation rate without stopping the machine.

1. Mounting head system

High-speed universal mounting head (HM head): equipped with 10 mounting rods, supports 0201 (0.25×0.125mm) to 55×100mm components (maximum height 15mm), and the theoretical mounting speed reaches 95,000 CPH (dual cantilever configuration).

Dynamic pressure control: automatically adjusts the Z-axis pressure (0.1N~10N) according to the component type, adapting to the non-destructive mounting of precision components (such as MLCC, thin IC).

Special-shaped mounting head (FM head): equipped with 5 mounting rods, supports 03015 (0.3×0.15mm) to 55×100mm special-shaped components (maximum height 28mm), such as heat sinks and connectors, and the mounting speed reaches 90,000 CPH.

θ-axis rotation control: supports ±180° rotation to ensure accurate positioning of polar components.

2. Vision and inspection system

High-resolution camera (VCS): supports multi-angle lighting and multiple exposures to generate 3D images, detect component pin bending, polarity and solder ball status, with an accuracy of ±0.025mm (Cpk≥1.0).

Laser sensor (LNC): Real-time tracking of component height and position to reduce placement errors caused by nozzle wear or contamination.

3D solder paste detection (optional): By laser scanning the PCB pad height, the placement pressure is optimized to prevent cold soldering or tombstone defects.

3. Feeder system

High-capacity feeding configuration: Fixed feeder rack: supports up to 140 8mm tape feeders, compatible with tube-mounted and tray-mounted components.

One-time material changer: provides 128 stations, supports fast line change, and reduces downtime.

Automatic tray feeder: fixed type supports 30 layers, and the material cart type supports 10 layers, which is suitable for high-mix production needs.

4. PCB processing capability

Support for ultra-large substrates: Single-track mode: supports 50×50mm~810×490mm substrates; dual-track mode (X-axis dual-beam model) supports simultaneous processing of 380×490mm dual substrates, suitable for long-sized PCBs such as LED light boards.

Intelligent clamping system: automatically adjusts the track width and support pin position to reduce deformation during substrate transmission and improve mounting stability.

5. Software and intelligent functions

VIOS operating system: an intuitive Windows-based interface that supports offline programming (CAD import) and 3D simulation debugging, shortening line change time to minutes.

Real-time monitoring and diagnosis: displays the throwing rate, equipment status and fault code, integrates IPC-CFX and SECS/GEM protocols, and seamlessly connects with MES/ERP systems.

Predictive maintenance: sensors monitor the health status of equipment in real time, provide maintenance warnings, and reduce the risk of unexpected downtime.

Parameters

Model	YSM20R
Applicable PCB	Single lane L810 x W490 to L50 x W50 Dual stage Note: For X-axis 2-beam option only 1PCB conveyance: L810 x W490 to L50 x W50 2PCB conveyance: L380 x W490 to L50 x W50
Head / Applicable components	High-Speed Multi (HM) Head * 0201mm to W55 x L100mm, Height 15mm or less Odd-shaped components (FM: Flexible Multi) head: 03015mm to W55 x L100mm, Height 28mm or less
Mounting capability (under optimum conditions as defined by Yamaha Motor)	X axis 2-beam: High-speed multi-purpose (HM: High-speed Multi) head x 2 95,000CPH
Mounting accuracy	±0.035mm (±0.025mm) Cpk≧1.0 (3σ) (under optimum conditions as defined by Yamaha Motor when standard evaluation materials are used)
Number of component types	Fixed plate: Max. 140 types (conversion for 8mm tape feeder) Feeder carriage exchange: Max. 128 types (conversion for 8mm tape feeder) Trays for 30 types (Fixed type: max., when fitted with sATS30) and 10 types (Carriage type: max., when fitted with cATS10)
Power supply	3-Phase AC 200/208/220/240/380/400/416V +/-10% 50/60Hz
Air supply source	0.45MPa or more, in clean, dry state
External dimension	L 1,374 x W 1,857 x H1,445mm (Main unit only)
Weight	Approx. 2,050kg (Main unit only)

YSW20WR

YAMAHA YSM20WR | High-efficiency Modular placement machine

Product information

Yamaha YSM20WR SMT machine, this versatile SMT machine has the fastest speed in its class, taking the innovation of single-head SMT solutions to a whole new level. The fastest SMT speed in its class, YSM20WR is 5% faster than YSM20. It is equipped with a new wide-angle scanning camera and has stronger component adaptability. Optional functions can increase the production line operation rate without stopping the machine.

1. Placement head system

High-speed universal integrated placement head (HM head): adopts dual cantilever configuration (X-axis dual-beam model), equipped with HM10 high-speed placement head, with a theoretical placement speed of 81,000 CPH (under Yamaha's optimal conditions) or 95,000 CPH (under some dealer test conditions), supporting 0201 (metric 0.25×0.125mm) to 55×100mm components, with a maximum height of 15mm.

Dynamic pressure control: Automatically adjust the placement pressure according to the component type to prevent damage to precision components (such as MLCC, thin IC).

Special-shaped placement head (FM head): FM5 multi-function placement head supports 03015 (0.3×0.15 mm) to 55×100mm special-shaped components (such as heat sinks, connectors), with a maximum height of 28mm, suitable for mixed placement scenarios.

θ-axis rotation control: supports ±180° rotation to ensure accurate positioning of polar components.

2. Vision and inspection system

High-precision identification system: Laser sensor: Real-time detection of component position, angle and height, with mounting accuracy of ±0.035mm (±0.025mm) @ Cpk≥1.0 (3σ).

Multi-vision camera: Supports pin bending detection and solder ball status analysis of complex packages (such as BGA, QFP), and can be expanded with 3D solder paste detection function after optional configuration.

3. Feeder system

High-capacity feeding configuration: Fixed feeder rack: supports up to 140 8mm tape feeders, compatible with tube-mounted and tray-mounted components.

One-time material changer: provides 128 stations, supports fast line change, and reduces downtime.

Automatic tray feeder: Fixed type supports 30-layer trays, and the material cart type supports 10-layer trays, which are suitable for high-mix production needs.

4. PCB processing capability

Compatibility of ultra-large substrates:

Dual-track models support substrates of the same width: maximum size L810×W356mm, minimum L50×W50mm. (Supports substrates of different widths: maximum expansion to L810×W662mm.)

Single-track models: Support substrate sizes from L810×W490mm to L50×W50mm, suitable for long-size PCB production such as LED light boards.

Intelligent clamping system: Automatically adjusts the track width and support pin position to reduce substrate transmission deformation and improve mounting stability.

5. Motion control system

Linear motor drive: X/Y axis uses high-precision linear motor and magnetic suspension technology, combined with 0.001mm resolution magnetic scale to achieve micron-level positioning under high-speed motion.

Dual servo Y-axis drive: Optimizes track transmission stability, reduces vibration, and ensures the consistency of long substrate mounting accuracy.

6. Software and intelligent functions

VIOS operating system: Supports offline programming (CAD import) and 3D simulation debugging, shortening line change time to minutes.

Real-time monitoring and diagnosis: Displays the material rejection rate, equipment status and fault codes, integrates IPC-CFX and SECS/GEM protocols, and seamlessly connects with MES/ERP systems.

Predictive maintenance: Sensors monitor the health status of equipment in real time, provide maintenance warnings, and reduce the risk of unexpected downtime.

Parameters

Model	YSM20WR
Applicable PCB	Single lane Note 1 Same type PCBs: L810 x W356 to L50 x W50 Different type PCBs: up to L810 x W662 Note 2 Same type PCB: L810 x W280 to L50 x W500 Different type PCBs: up to L810 x W510
Head / Applicable components	High-Speed Multi (HM) Head Note 3 0201mm to W55 x L100mm, Height 15mm or less Odd-shaped components (FM: Flexible Multi) head: 03015mm to W55 x L100mm, Height 28mm or less
Mounting capability (under optimum conditions as defined by Yamaha Motor)	X axis 2-beam: High-speed multi-purpose (HM: High-speed Multi) head x 2 81,000CPH
Mounting accuracy	±0.035mm (±0.025mm) Cpk≧1.0 (3σ) (under optimum conditions as defined by Yamaha Motor when standard evaluation materials are used)
Number of component types	Fixed plate: Max. 140 types (conversion for 8mm tape feeder) Feeder carriage exchange: Max. 128 types (conversion for 8mm tape feeder) Trays for 30 types (Fixed type: max., when fitted with sATS30) and 10 types (Carriage type: max., when fitted with cATS10)
Power supply	3-Phase AC 200/208/220/240/380/400/416V +/-10% 50/60Hz
Air supply source	0.45MPa or more, in clean, dry state
External dimension	L 1,374 x W 2,110 x H1,445mm (Main unit only)
Weight	Approx. 2,050kg (Main unit only)

YSM40R

YAMAHA YSM40R | Ultra-High-Speed Modular placement machine

Product information

YSM40R has achieved a breakthrough production efficiency of 200,000 CPH, achieving the world's fastest speed on a compact platform, the world's highest production efficiency, and can efficiently cope with various production configurations! High technology supports high placement quality and high machine operation rate.

1. Mounting head system

Multi-type mounting head configuration:

Ultra-high-speed RS mounting head: supports 0201 (0.25×0.125mm) to 6.5×6.5mm components (height ≤ 2mm), with a theoretical mounting speed of 200,000 CPH (under Yamaha's best conditions), suitable for high-speed mounting of micro components.

Multi-function MU mounting head: handles 03015 (0.3×0.15mm) to 45×60mm components (height ≤15mm), with a speed of 58,000 CPH, and supports complex packages such as QFP and BGA.

Odd-shape FL mounting head (optional): supports 0603 to 45×100mm special-shaped components (height ≤25.5mm), such as heat sinks and connectors, to enhance the flexibility of mixed production.

Modular design:

It can be configured as 4 beams and 4 placement heads (YSM40R-4) or 2 beams and 2 placement heads (YSM40R-2). Users can quickly adjust production capacity to meet different production needs.

2. Vision and inspection system

High-precision visual recognition:

Laser sensor (LNC): Real-time detection of component position, angle and height, with a placement accuracy of ±35μm (±25μm @ Cpk≥1.0), meeting the needs of high-density PCB mounting.

Multi-view camera: Supports multi-angle lighting and 3D image generation, detects complex features such as pin bending and solder ball status, and improves yield.

Automatic calibration function: Achieve repeatability accuracy of ±0.03mm (CHIP component) and ±0.04 mm (QFP package) through IPC9850 standard, adapting to long-term stable production.

3. Feeder system

High-capacity feeding configuration:

RS placement head: supports 80 8mm tape feeders, compatible with tube-mounted and tray-mounted components, and improves the production efficiency of small batches and multiple varieties.

MU/FL placement head: expanded to 88 stations (8mm tape conversion), and up to 92 stations when equipped with special-shaped placement heads, to meet the needs of high-mix production.

New ZS high-speed feeder: supports non-stop switching and continuous production, reducing downtime.

4. PCB processing capacity

Ultra-large substrate compatibility: standard support for 50×50mm~700×460mm substrates, and after expansion, it can handle up to 700×460mm long substrates (such as LED light boards).

Intelligent clamping system: automatically adjusts the track width and support pin position to reduce substrate transmission deformation and improve placement stability.

5. Motion control system

Linear motor drive: X/Y axis uses high-precision linear motor and magnetic suspension technology, combined with 0.001mm resolution magnetic scale, to achieve high speed (acceleration optimization) and micron-level positioning stability.

Dual servo Y-axis drive: optimizes track transmission stability and reduces vibration in long substrate placement.

6. Software and intelligent functions

VIOS operating system: supports offline programming (CAD import) and 3D simulation debugging, optimizes placement path, and shortens line change time to minutes.

Real-time monitoring and diagnosis: displays the throwing rate, equipment status and fault code, integrates IPC-CFX and SECS/GEM protocols, and seamlessly connects with MES/ERP systems.

Predictive maintenance: sensors monitor the health status of equipment in real time, provide maintenance warnings, and reduce the risk of unexpected downtime.

Parameters

Model	4-Beam, 4-Head Spec. (YSM40R-4)	2 -Beam,	2-Head Spec. (YSM40R-2)
Applicable PCB	L700xW460mm to L50xW50mm		
Speed	200,000CPH (When usingRS head)	58,000CPH (When using MU head)	
Applicable components	0201* to=6.5mm (Height 2.0mm or less) *option 03015 to 45x60m (Height 15mm or less)	0402 to 45x100mm (Height 15mm or less) 0603 to 45x100mm (Height 25.5mm or less)	
Mounting accuracy	+/-35μm (25μm) Cpk≥1.0(3σ)	+/-40μm (30μm) Cpk≥1.0 (3σ)	
Number of component types * 8mm width tape conversion	Max.80 feeders with RS heads	92 feeders with MU or FL heads	
	Max.88 feeders with MU heads		
	Max.84 feeders with RSx2+MUx2 heads		
Power supply	3-Phase AC 200/208/220/240/380/400/416V +/-10%		
Air supply source	0.45MPa or more, in clean, dry state		
External dimension	L1,000xW2,100xH1,550mm		
Weight	Approx.2,100 kg		

Σ-F8S

YAMAHA Σ-F8S | Premium modular placement machine

Product information

Yamaha's Σ-F8S "Single Head Solution" rotary head offers high speed, versatility and high operation rate. Fastest speed in its class! This machine is equipped with a 4-beam 4-head direct drive head and has a production speed of up to 150,000 CPH.

1. Mounting head system

Turret mounting head: adopts 4 beams and 4 mounting heads structure, which enables a single mounting head to support fast switching of multiple components. The theoretical mounting speed reaches 150,000 CPH (dual-track model) or 136,000 CPH (single-track model), which is the highest speed level among similar models.

Direct drive design: The mounting head is directly driven by a brushless motor to reduce mechanical transmission loss and improve response speed and accuracy (mounting accuracy ±25μm @ 3σ, supporting 0201 (0.25×0.125mm) chip components).

2. Feeder system

SL feeder (Super Loading Feeder): supports 8mm to 56mm tape feeders, with a maximum capacity of 80 components (calculated based on 8mm tape), compatible with tube-mounted and tray-mounted components, and improves material change efficiency and production continuity.

Innovative refilling operation mode: Reduce manual intervention, increase actual production capacity to 75%, and significantly reduce downtime.

3. Vision and detection system

High-precision laser recognition: Real-time detection of component position, angle and height, support 03015 chips (±25μm accuracy) and 0402/0603 components (±36μm accuracy), and meet the needs of high-density PCB mounting.

Coplanarity detection device: Integrated high-reliability detection module to ensure the mounting quality of special-shaped components (such as QFP, BGA).

4. PCB processing capability

Substrate size compatibility: Single-track model: Supports 50×50mm~381×510mm substrates (standard configuration), and the expansion option supports large-size PCBs of L381×W510mm.

Dual-track model: Supports 330×250mm~50×50mm substrates, suitable for efficient dual-track synchronous production of small and medium-sized PCBs.

Intelligent transmission system: optimize substrate fixation and transmission speed, reduce vibration and deformation, and improve mounting stability.

5. Motion control system

Offset linear motor drive: X/Y axis uses linear motor and magnetic suspension technology, combined with lightweight beam design, to reduce mechanical vibration and achieve micron-level positioning under high-speed motion (acceleration optimization).

Dual servo Y-axis drive: ensure the synchronization and stability of track transmission, and improve the accuracy and consistency of long substrate mounting.

6. Software and intelligent functions

Real-time production monitoring: integrated fault diagnosis and parameter adjustment interface, supports real-time display of mounting status, throwing rate and error code, and optimizes production management efficiency.

Compatibility expansion: supports combination with other YAMAHA models (such as YSM series) to build flexible production lines and adapt to diversified production scenarios.

Parameters

Model	Σ-F8S
Applicable PCB	Single lane :L330 x W250 to L50 x W50mm (Option : L381 x W510 to L50 x W50mm) Dual lane : L330 x W250 to L50 x W50mm
Head / Applicable components	High-speed head : 0201mm CHIP to 4.3 x 3.4mm, Height 2.0mm or less High-speed multi-purpose head : 03015mm CHIP to 33mm square, Height 12.7mm or less
Mounting capability	High-speed head x 4 specs : 150,000CPH (Dual lane) 136,000CPH (Single lane)
Mounting accuracy (Under optimum conditions as defined by Yamaha Motor when standard evaluation materials are used)	High-speed head : 0201mm/03015mm : ±25μm (3σ) (140,000CPH) 0402mm/0603mm : ±36μm (3σ) (150,000CPH)
Number of component types	Max.80 types (conversion for 8mm tape feeder)
Power supply	3-Phase AC200V ±10% 50/60Hz
Air supply source	0.45 to 0.69MPa (4.6 to 7kgf/cm2)
External dimension	L 1,280 x W 2,240 x H 1,450mm (excluding projections)
Weight	Approx. 1,940kg

Σ-G5S II

YAMAHA Σ-G5S II | High-Speed Premium Modular Placement Machine

Product information

Yamaha Σ-G5S II high-speed SMT PCB placement machine adds two new types of placement heads based on the "single placement head solution" to achieve high productivity. [Can place ultra-small 0201mm (0.25 × 0.125 mm) components and large components.] This machine has expanded the component detection range and improved the placement quality. While increasing the internal buffer space, it reduces the feeding loss of large PCBs. It has further improved the details to improve reliability. And this machine is compatible with old models.He processed components of three different sizes, 0201, 0402 and 0603, at speeds of 80,000, 85,000 and 90,000 CPH respectively.

1. Mounting head system

Turret mounting head: adopts a single-head solution, a single mounting head can support the mounting of multiple components, with a theoretical speed of 90,000 CPH(0603component)(single-track/dual-track models), which is about 20% higher than the previous generation Σ-G5S.

Rotary direct drive technology: directly driven by a brushless motor, it reduces mechanical transmission loss, improves response speed and accuracy, and supports 0201 (0.25×0.125mm) to 44×44mm components (height ≤12.7mm), and 72×72mm large ICs (height ≤25.4mm).

2. Feeder system

SL feeder (Super Loading Feeder): supports 8mm to 56mm tape feeders, with a maximum capacity of 120 stations (converted to 8mm tape), compatible with tube-mounted and tray-mounted components, and realizes continuous feeding without splicing, reducing downtime.

Fast material change design: optimize the line change efficiency through batch material change car, adapt to high-mix production needs.

3. Vision and inspection system

High-speed coplanarity detection device: real-time detection of component pin bending, polarity and coplanarity, improve the placement yield of complex packages such as QFP and BGA, with an accuracy of ±25 μm (0201/03015 components) to ±40μm (0603 components).

Laser recognition technology: combined with multi-angle lighting and image processing, it supports accurate tracking of component height and position, reducing placement errors.

4. PCB processing capabilities

Ultra-large substrate compatibility: Single-track model: standard support for 50×50mm~610×510mm substrates, and expansion options support 1,200×510mm long substrates (suitable for scenes such as LED light boards).

Dual-track model: supports dual-track synchronous placement, with substrate sizes of 610×250mm~50×84 mm, or 610×415mm in single-track mode.

Intelligent transmission system: optimizes substrate fixation and transmission speed (up to 900mm/sec), reduces vibration and deformation.

5. Motion control system

Linear motor drive: X/Y axis adopts high-precision linear motor and magnetic suspension technology, combined with 0.001mm resolution magnetic ruler, to achieve micron-level positioning stability under high-speed motion.

Dual servo Y-axis drive: optimizes track transmission synchronization to ensure the accuracy consistency of long substrate placement.

6. Software and intelligent functions

VIOS operating system: supports offline programming (CAD import) and 3D simulation debugging, optimizes placement path, and shortens line change time to minutes.

Real-time monitoring and diagnosis: integrated throwing rate, equipment status and fault code display, supports IPC-CFX and SECS/GEM protocols, and seamlessly connects with MES/ERP systems.

Predictive maintenance: sensors monitor equipment health status in real time, provide maintenance warnings, and reduce the risk of unexpected downtime.

Parameters

Model	Σ-G5S II	
Applicable PCB	Single lane Dual lane	L610×W510 mm to L50×W50 mm (Optional: L1,200×W510 to L50×W50 mm) L610×W250 mm to L50×W84mm (dual feed) L610×W415mm (single feed)
Mounting capability	High-Speed Multi-Head×2 specifications: 90,000 CPH (single lane/dual lane)	
Mounting accuracy (Under optimum conditions as defined by Yamaha Motor when standard evaluation materials are used)	High-Speed Multi (HM) Flexible Multi (FM) Head	0201mm/03015mm: ±25µm/80,000 CPH 0402mm: ±36 µm/85,000 0603mm: ±40 µm/90,000 CPH ±15µm
Applicable components	High-Speed Multi (HM) Head Flexible Multi (FM) Head	High-Speed Multi (HM) Head 1005mm to L72×W72×H25.4 mm or under Connector: 150×26 mm
Number of component types	120 types max. (8 mm wide tape equivalent)	
Power supply	3-phase AC200V ±10%, 50/60Hz	
Air supply source	0.45 to 0.69 MPa (4.6 to 7 kgf/cm^2)	
External dimension (excluding projections)	L 1,280 x W 2,240 x H 1,450mm	
Weight	Approx. 1,800 kg	